

U. S. NAVAL AVIATION SAFETY CENTER  
U. S. NAVAL AIR STATION  
NORFOLK 11, VIRGINIA

NASC/60/rjb  
Ser: 278  
8 MAY 1958

From: Commander, U. S. Naval Aviation Safety Center  
To: Chief, Bureau of Aeronautics

Subj: Report of Independent Investigation of Major Aircraft Accident Involving  
LTJG Robert L. FISK, 594851/1315, USNR in F8U-1, BuNo 114433 on 3 April  
1958

Ref: (a) OPNAV INSTRUCTION 3750.6B  
(b) OPNAV INSTRUCTION 3750.9

Encl: (1) Copy of subject report

1. In accordance with reference (a), the Naval Aviation Safety Center conducted an independent investigation of the aircraft accident involving LTJG Robert L. FISK, (b) (6) USNR in F8U-1, BuNo 114433 eight and one-quarter miles, bearing 117°M from the Control Tower at U. S. Naval Air Station, Moffett Field, California.
2. a. The findings and recommendations contained in enclosure (1) are the results of thorough examination of available evidence by aircraft accident investigators from the Naval Aviation Safety Center.  
b. Enclosure (1) is a copy of the subject report and is forwarded in accordance with reference (b) for information and such action as deemed appropriate.  
c. Additional copies of enclosure (1) are available upon request from the U.S. Naval Aviation Safety Center, U. S. Naval Air Station, Norfolk 11, Virginia.
3. It is requested that any action taken, planned, or in process concerning the recommendations of this investigation be reported to the Chief of Naval Operations, with a copy to the Naval Aviation Safety Center. In case of negative action, reasons should be stated.

*P/B*  
*Allen Smith Jr.*  
ALLEN SMITH, Jr.

Copy to:  
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REPORT OF INDEPENDENT INVESTIGATION

OF MAJOR AIRCRAFT ACCIDENT

INVOLVING

LTCG ROBERT L. FISK, (b) (6) USNR

IN F8U-1, BU NO 144433

EIGHT AND ONE-QUARTER MILES, BEARING 117° M

FROM THE CONTROL TOWER AT

NAVAL AIR STATION MOFFETT FIELD, CALIFORNIA

ON

3 APRIL 1958

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THE ACCIDENT

1. F8U-1, Bureau Number 144433, assigned to Fighter Squadron TWO HUNDRED - ELEVEN, crashed and burned in an orchard, eight and one-quarter miles, bearing 117°M from the control tower at Naval Air Station, Moffett Field, California, at approximately 1523, on 3 April 1958. The pilot ejected at low altitude. He received fatal injuries when he struck the ground with the parachute still encased in its pack. The aircraft was damaged beyond repair. The ejection seat and canopy struck nearby houses causing minor property damage. The orchard and strawberry field in which the aircraft and pilot landed also received minor damage. The mission of this flight was to conduct simulated instrument flight training.

HISTORY OF FLIGHT

2. At approximately 1100 3 April 1958, LTNG Robert L. FISK, (b) (6) USNR, took off in F8U-1, BuNo 144433, from runway 12 right at NAS Moffett Field, California. LTNG FISK was accompanying LTJG (b) (6) (b) (6) USN, who was flying F8U-1, BuNo 144442, to conduct simulated instrument flight training. The flight had been properly briefed and was operating under an authorized local VFR flight clearance.

3. Individual afterburner take-offs were made. The flight rendezvoused, and a military rated thrust climb was made to 45,000 feet. Engine acceleration checks were conducted at 45,000 feet. LTNG FISK's engine accelerated from idle to military RPM in thirty seconds. LTJG (b) (6) s in twenty-nine seconds, indicating normal engine operation.

4. Simulated instrument flight training was conducted at altitude and the flight then descended to conduct unhooded practice GCA at NAS Moffett Field. LTJG (b) (b) (6) completed three approaches to a wave-off and then passed the lead to LTNG FISK. LTNG FISK had completed one GCA and had just started the final descent of his second approach when he received a wave-off because of conflicting traffic. He was instructed to make a 180-degree right turn and climb to 2,000 feet. LTNG (b) (6) noticed that several rain squalls were approaching the field, so he decided that the flight should leave the GCA pattern and make a final landing. He requested a fuel check from LTNG FISK, but received no reply. LTNG FISK had acknowledged all previous radio transmissions. At this time LTJG (b) (6) s fuel quantity gage indicated approximately 2,500 pounds of fuel remaining. LTNG (b) (6) informed GCA of his intentions to make a final landing and told LTNG FISK that he was assuming the lead. The aircraft were in the landing configuration, approximately at 2,000 feet altitude, 170 knots IAS, power about 85% RPM. LTNG FISK again did not acknowledge the radio transmission, but he did start to put his aircraft in the cruise configuration.

5. LTNG (b) (6) added power and pulled up abeam of LTNG FISK's aircraft. He noticed that LTNG FISK was directing his attention to something inside the cockpit. FISK's aircraft then started drifting back rapidly and losing altitude. LTNG (b) (6) observed that the characteristic black smoke was no longer issuing from the tail pipe of FISK's aircraft, and that a puff of fuel vapor emerged from

NOTE: Unless otherwise indicated times herein are Pacific Standard, altitudes are mean sea level, distances are nautical miles, and bearings are magnetic

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the lower fuselage similar to that which occurs when the engine is shut down. LTJG (b) (6) momentarily lost sight of the other aircraft, and when he next saw it, it was approximately 500 feet below him in an ever increasing nose down attitude. As LTJG FISK's aircraft reached an estimated 1,000 feet altitude, in a 45 degree nose down attitude, he ejected. Canopy separation and the ejection appeared normal. The pilot separated from the seat in a normal programmed manner. The parachute did not deploy. After LTJG (b) (6) informed Moffett GCA and tower of the crash, he returned to the field and landed. His aircraft had 2,041 pounds of fuel remaining when he arrived at the line.

#### INVESTIGATION AND ANALYSIS

6. Two Naval Aviation Safety Center investigators arrived at Naval Air Station Moffett Field, California, at 2230, 4 April 1958, to conduct an independent investigation of this accident. The Squadron Duty Officer and Commanding Officer of VF-211 were informed of the investigators' arrival and a meeting was arranged for the next morning. At this meeting investigation progress to date was reviewed and further investigative plans were formulated. The wreckage had been removed from the scene of the accident and laid out in hanger 2 at NAS Moffett Field. A wreckage diagram had been prepared and photographs taken at the scene of the accident. An autopsy of the pilot's body had been conducted. Aircraft Accident Board members had obtained a few witness statements. A disassembly inspection of the engine and accessories had been requested. Plans were made to locate and interview additional witnesses, and to accompany components of the engine fuel system to O&O North Island for disassembly inspection. NASC investigators and accident board members then commenced an examination of the pilot escape system and aircraft wreckage.
7. Examination of the aircraft wreckage revealed that:
  - a. Aircraft configuration at the time of ground impact was as follows:
    - (1) Wing down and locked, cruise droop extended.
    - (2) Landing gear in process of retracting.
    - (3) Emergency power package, Marquardt unit, retracted.
  - b. The aircraft struck the ground in a wings level, approximately 80 degrees nose down attitude, disintegrating the fuselage from the nose back to a point about three feet forward of the tail section disconnect.
  - c. Moderate post-crash fire damage was sustained by the mid-fuselage section, wing, and accessory section of the engine. No evidence of in-flight fire was noted.
  - d. First stage compressor rotor blades displayed slight anti-rotational bending to a degree which indicated that the engine was turning at a very low rpm at the time of the impact.
  - e. The engine casing was relatively intact, but crumpled in the vicinity of the afterburner fuel manifold.

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f. Field examination of the third stage turbine blades and tail pipe did not reveal any evidence of turbines blade heat distress or metalization.

g. One corner of the accessory gear box was burned away and the casing was cracked slightly; however, the gear train appeared to be intact and in place.

h. The main oil filter contained a few bright metal chips, which appeared to have originated from the oil pump during the crash. The filter disk separator had been partially melted in the post-crash fire and numerous shot-like pellets thus formed were in the filter cavity.

i. Drive shafts between the engine and the accessory gear box were intact. Slight indentations and wiping on the splines of these shafts also indicated that the engine was turning at the time of ground impact.

j. The fuel control was intact, but had been subjected to fire which damaged the temperature sensing tube and electrical connections. Slight impact damage had occurred to the burner pressure sensing bellows. The power lever quadrant was in the cut-off position. This position is not considered conclusive because of the lever's susceptibility to movement during the crash.

k. The engine driven fuel pump was intact.

l. The master fuel shut-off valve and manual wing fuel shut-off valve were open.

m. Aircraft fuel boost pumps did not show evidence of rotation at the time of ground impact.

n. The engine pressurizing and drain valve was intact.

8. During the removal of the fuel control and engine driven fuel pump from the engine, approximately one teaspoonful of shredded, black, rubber-like contamination was found packed in the fuel control inlet port and adjoining elbow. This contamination was analysed and determined to be the remains of an "O" ring seal. The seal between the fuel control inlet elbow and control body was in place and intact, as was the seal between the elbow and transfer valve to fuel control tube. The fuel control and engine driven fuel pump were flown to NAS North Island for disassembly inspection at the Overhaul and Repair Department.

9. Disassembly inspection of the fuel control, JFC 12-2, serial number 10621, revealed that:

a. The coarse (200 mesh) filter had entrapped an excessive amount of bronze and aluminum filings, lint, and dirt. Engineers at O&R North Island considered this contamination to be sufficient to cause the filter to by-pass fuel. No large pieces of rubber similar to those packed in the fuel inlet were found in this filter.

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The servo (35 micron) filter had entrapped a few metallic particles, however it was quite clean compared to the coarse filter.

c. A portion, about 3/8ths of an inch along the circumference, of the sealing surface of the inboard "O" ring seal on the main pressure regulating valve had been ground or torn away. Small particles of this "O" ring were in the valve cavity or adhered to the valve assembly. This damage conceivably could have occurred during the crash or disassembly.

d. Some slight evidence of contamination was noted in the servo section of the fuel control. Specifically, a few hard metallic filings were found in one land of the throttle operated pilot valve, and the piston of the 3D cam assembly displayed burnishing apparently caused by fine metal particles being lodged between the piston and the nylon chevron packing. This contamination is not considered sufficient to have caused malfunction of the fuel control. The general condition of valves, servos, etc. in the fuel control, plus the normal engine operation obtained up to the instant of flame out further indicate that the fuel control was functioning properly.

e. The emergency solenoid valve was in the primary position. This indicates that the normal fuel control system was being used.

f. An "O" ring and nylon valve seat of the minimum pressure shut-off valve had been damaged in the crash and fire. A few pieces of the "O" ring were found in the immediate vicinity of this damage.

10. Disassembly inspection of the fuel pump, serial number PE 2617, revealed that:

a. The drive mechanism and pumps were intact with no evidence of mechanical malfunction or failure. No evidence of fuel starvation to the pump was noted.

b. Gear pump teeth and bronze bearing surfaces displayed some burnishing and pitting attributable to normal wear and cavitation erosion. The A/B stage sustained more erosion than did the main stage, however, the degree of pitting and wear was not considered abnormal or excessive in either stage.

c. The fuel pump filter contained a few metallic chips and shavings plus a small piece of cellophane. No rubber contaminant was found in the filter.

d. Shreds of rubber similar to those found in the fuel control inlet port were found in the fuel pump transfer valve assembly. The rubber particles were concentrated in areas directly downstream of the gear stages of the fuel pump. The quantity of shredded rubber found in the transfer valve assembly was approximately one-quarter of that found in the fuel control inlet.

e. All seals normally in the fuel pump and fuel pump transfer valve assembly were intact and in their proper position.

f. The fuel pump transfer valve was in the non-afterburning position.

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11. The shredded remains of an "O" ring seal found in the engine fuel system were localized between the fuel pump filter and the coarse filter in the fuel control. No rubber particles were found in either of these filters. All fuel, including by-passed fuel from the control, which enters the gear stages of the fuel pump must pass through the fuel pump filter. The pieces of rubber contamination found in the transfer valve assembly and fuel control inlet were too large to have passed through the fuel pump filter. At the time of disassembly, all seals which were supposed to be in the fuel system between these two filters were intact and in their proper positions. An extra "O" ring could have been dropped into the fuel pump inadvertently during assembly. In view of the above facts, it is evident that an "O" ring seal must have been adrift in the body of the fuel pump downstream of the filter. Furthermore, it is apparent that this "O" ring passed through the gear-type fuel pumps just prior to the time that the engine stopped operating. Otherwise, the rubber contamination would have been more widely distributed in the engine fuel system and should have appeared in some of the filters. The fact that most of this "O" ring did not get beyond the fuel control inlet prior to the crash is considered too much of a coincidence not to be associated with the cause of the power failure.

12. In order to analyze how a partial blockage of the fuel control inlet would affect engine operation, a similar control and pump were set up on a flow bench at O&R Norfolk. A valve was installed in the fuel control inlet line. The bench was operated to duplicate, as nearly as possible, conditions at the time of flame-out (ie: 2000 feet altitude, 85% engine RPM). The valve at the fuel control inlet was closed slowly. Fuel flow from the control decreased as the valve closed. When the valve was within a quarter-turn of being completely closed, the minimum pressure shut-off valve in the fuel control closed and fuel flow ceased. Additional runs were made varying the speed at which the inlet valve was closed. When the valve was closed rapidly, fuel flow decreased below the minimum flow required by the engine deceleration schedule. This would cause a lean flame-out.

13. Except for the contamination in the engine fuel system, preliminary telephone reports of the disassembly inspection of the J-57-P1A engine, serial P-626759, did not reveal any abnormalities which were not directly attributable to ground impact damage. Examination of maintenance records and log books did not disclose any uncorrected discrepancies or unincorporated technical directives which may have contributed to this accident. The engine operating time was logged as follows:

<u>14.1</u>	Hours	Total Test (Not counted)
<u>10.5</u>	Hours	Final Test
<u>17.1</u>	Hours	Since Installation in F8U-1, BuNo 144433
<u>27.6</u>	Hours	Total

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14. Discussion of JFC-12-2 fuel control filter problems with O&R and squadron maintenance personnel responsible for inspecting and cleaning these filters revealed that they are difficult to inspect for contamination and even more difficult to clean. Contamination in the form of lint, dirt, and small metal particles frequently is found in these filters after relatively few hours of operation. This contamination apparently enters the aircraft/engine fuel system during the manufacturing process. In several instances, the amount of contamination found in the filters has been considered sufficient to cause fuel to by-pass. Looking further into the F8U/J-57 fuel system it becomes apparent that no really effective fuel filtration is provided. Screens over the aircraft fuel boost pump inlets will stop "large nuts and bolts". No low pressure fuel filter is provided in the aircraft. A 40 mesh strainer is provided in the engine driven fuel pump, but again this is not considered to be adequate. The next filter in the system is the 200 mesh filter in the fuel control. Referring to the strainer in the fuel pump and the fuel control filters, the engine manufacturer states "periodic check of these items is recommended every 25 hours although it should be noted that these screens are not intended to serve the functions of cleaning the fuel but rather as protection against occasional contamination." It would appear that a low pressure fuel filter should be provided in F8U-1 aircraft. In the meantime, the aircraft/engine fuel system should be thoroughly flushed after manufacturing, and the fuel control filters should be changed periodically.

15. Fuel consumption computations and a study of the aircraft fuel transfer system indicated that malfunction or mismanagement of the transfer system could have caused the flame-out. Inspection of transfer fuel system components did not reveal evidence of malfunction. However, it is possible that the pilot inadvertently mispositioned the fuel transfer switch. This switch is a three-position toggle switch. In the upper position, "FUEL TRANS", fuel is transferred automatically from the aft fuselage cells and wing tank to the main cell which supplies fuel to the engine. The mid-position of the fuel transfer switch, "PUMP OFF", cuts off the aft cell cluster transfer pump but permits wing fuel to continue transferring. The lower position of this switch, "PRESS DUMP", vents the wing tank to ambient pressure and effectively stops transfer of fuel to the main cell. According to standard procedures, the fuel transfer switch is placed in the "PRESS DUMP" position for take-off and landing. After take-off, "FUEL TRANS" is selected until the pump warning light comes on and approximately 2000 pounds is indicated on the transfer fuel gage. The switch is then supposed to be placed in the "PUMP OFF" position until "PRESS DUMP" is selected for landing. A test flight was flown, duplicating the fatal flight as closely as prudence permitted. During the test flight, the fuel transfer switch was deliberately placed in the "PRESS DUMP" position at the time of "PUMP OFF" position should have been selected. Extrapolation of time versus fuel data obtained on this test flight proved that the accident could have been caused in the above manner.

16. Factors which might contribute to fuel system mismanagement as discussed above are the fuel quantity system display and the lack of a low fuel level warning light in the aircraft. Two fuel gauges of identical size are located side by side on the F8U-1 instrument panel. One of these gauges indicates fuel

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in the main cell and the other fuel in the transfer system. It is considered that a pilot can easily mistake one of these gauges for the other if he merely glances at them in his instrument scan pattern. A main tank low fuel level warning light would direct the pilot's attention to this sort of a situation in time for him to take corrective action. MIL SPEC MIL-F-17874 dated 25 January 1954, paragraph 3.3.4.4, requires that a low fuel level warning system shall be provided in VF aircraft.

17. The design of the fuel transfer toggle switch is considered to be excellent in that it tends to prevent inadvertent selection of the pressure dump position. The toggle may be flicked back and forth between the fuel transfer and pump off positions, but it must be pulled outward and down over a shoulder to attain the pressure dump position. In view of the transfer switch design and previously discussed contamination found in the engine fuel system, mismanagement of the transfer fuel system is considered to be improbable as the cause of this accident.

18. Examination of all components of the pilot escape system and interrogation of witness revealed that:

a. The canopy ejection cartridge had been fired and the canopy separated from the aircraft in normal manner.

b. The personnel catapult and lap belt release cartridges had fired. The ejection of the pilot from the aircraft and the pilot/seat separation appeared normal.

c. Correlation of ground impact positions of the canopy, seat, pilot and aircraft with fall-out computations and witness statements substantiate (a) and (b) above and indicate that the ejection altitude was approximately 800 feet.

d. The Irvin MKV automatic parachute opener had not been armed. The arming wire was intact and properly installed in the pack. During ground impact, the automatic device was damaged to the extent that the firing spring opened the parachute pack. The canopy deployed when the pilot's body was moved.

e. The loop on the end of the automatic parachute release wire was still around the pin on the manual rip cord. This fact, plus witness statements, indicates that the manual parachute release had not been actuated.

f. The ball swaged on the end of the automatic parachute release arming wire was still firmly attached to the wire. A few light Brinell marks were observed on this ball. The excellent condition of the ball proved that it had not been pulled through the slotted plunger of the emergency harness release handle.

g. The emergency harness release handle was out of its socket and dangling inside the seat bucket when the seat was first observed at the scene of the accident. This handle was in the fully extended position and the wire to which it is attached had been crimped over the edge of the seat. This was indicated by a kink in the wire and matching imprint marks in the seat edge. There were no marks on the handle, retaining stud, slotted plunger, or their respective holes to indicate that the handle had been knocked or forced from its socket.

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19. Considering the above evidence, it is apparent that the pilot successfully ejected from the aircraft and separated from the ejection seat. The parachute did not deploy because the automatic opening device was not armed and the pilot did not have time to locate and activate the manual release. The automatic parachute opener was not armed because the arming wire was not retained by the ejection seat at the time of pilot-seat separation. The pilot may have pulled the emergency harness release handle prior to ejection, thus releasing the parachute arming wire from the seat. His reason for doing this would be to expedite separation from the seat and parachute deployment. In days prior to the automatic lap-belt, the manual release of restraining harnesses prior to low altitude ejection was doctrine. The procedure of manually releasing the restraining harness prior to ejection, thereby inactivating the automatic parachute deployment system, is definitely not recommended with the present automatic equipment.

20. Improper rigging of the connection between the parachute arming wire and the ejection seat can also account for the fact that the automatic parachute opening device was not armed. When a parachute is installed in the aircraft, the arming wire conduit is led through a fair-lead on the starboard side of the seat. The slotted plunger in the emergency harness release handle is retracted from the arming wire hole by squeezing the handle, and the end of the arming wire is shoved down through the hole. The handle is released, thus retaining the arming wire which passes through the slotted plunger and is held in place by a ball wedged to the end of the wire. Experimentation with this connection revealed that it is easy to catch the ball between the end of the slotted plunger and the side of the hole. When misrigged in this manner, very little force was required to pull the arming wire away from the seat, and each time this was done the plunger snapped home, retaining the emergency harness release handle in its socket. In this accident, however, the emergency harness release handle was not in its socket after the seat struck the ground. Furthermore, the kinked wire and Brinelled seat edge, discussed above, indicate that the handle was not stowed while the seat was falling through the air. For these reasons, it is considered that the pilot probably pulled the emergency harness release handle prior to ejecting.

21. Revisions to the F8U-1-LP Flight Handbooks and Handbooks of Maintenance Instructions are being prepared by the contractor regarding the rigging of the parachute arming wire on the ejection seat and recommending that the emergency harness release handle not be pulled prior to ejection. BAR Dallas 101530Z, and VF-211 082Q4CZ are Safety of Flight messages concerning these subjects. It is noted that Section III of the Flight Handbooks states that a successful ejection can be made at altitudes as low as 500 feet with an automatic-opening lap belt and an automatic-opening parachute. Data from sled tests conducted by the contractor reputedly indicates that eight or nine hundred feet may be a more realistic minimum altitude for survivable ejection with the present equipment. Safety Center statistics also indicate that this 500-foot figure should be raised.

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22. LTJG Robert L. FISK, (b) (6) USNR, was 25 years old and had been designated a Naval Aviator on 3 June 1955. He had accumulated 1100.4 hours of pilot time, of which 796.2 hours were in jet aircraft. He had flown 151.4 hours in F8U-1 aircraft. No physiological factors were involved in this accident. A psychological factor, pulling the emergency harness release handle prior to ejection, has been discussed earlier in this report.

23. The aircraft F8U-1, BuNo 144433, was accepted by the Navy on 17 March 1958. It had been flown 7.6 hours prior to acceptance and 9.5 hours since acceptance. A major inspection, acceptance check, was completed by VF-211 on 22 March 1958. The aircraft had flown 5.2 hours since that inspection. A review of maintenance records and aircraft logs indicated no discrepancies or outstanding aircraft service changes which might have contributed to the accident. It was noted that item 39 of the Major Inspection Check Sheet, inspection of fuel control filters for contamination, had been complied with. Item 36(d) of the Daily and Pre-Flight Inspection Check Sheet, inspection of the emergency harness release lever control for proper position, also had been signed off. This item should be on the pre-flight check list in addition to the daily inspection check list.

24. The Moffett Field weather, at the time of the accident was an estimated 2500 feet broken ceiling, high overcast, visibility 6 miles, wind west southwest 20 knots, gusting to 32 knots, rain squalls in the area. Weather is not considered a factor in this accident.

#### FINDINGS

25. On the basis of all available evidence the Naval Aviation Safety Center finds that:

- a. The fuel filtration system in the F8U aircraft is inadequate.
- b. Contamination of the 200 mesh filter in the fuel control was excessive.
- c. An "O" ring seal was left adrift in the fuel pump body between the filter and the gear stages during assembly of the pump.
- d. A low fuel level warning light is needed but not provided in F8U aircraft.
- e. The pilot ejected at approximately 800 feet altitude, which is considered marginal for survival with the equipment provided.
- f. The parachute did not deploy because the automatic opening device was not armed and the pilot did not have sufficient time to actuate the parachute manually.
- g. The automatic parachute opener was not armed because either the pilot pulled the emergency harness release handle prior to ejection, or the arming wire was not properly connected to the ejection seat.
- h. Intermediate and Major Inspection Check Sheets, Daily and Pre-flight Inspection Check Sheets, Flight Handbook, and Handbook of Maintenance Instructions for F8U-1P aircraft are in need of revision.

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PROBABLE CAUSE

26. The Naval Aviation Safety Center determines that the most probable cause of this accident was a partial blockage of the fuel control inlet port by shredded pieces of an "O" ring seal which had been left adrift in the engine driven fuel pump, and which resulted in a flame-out.

RECOMMENDATIONS

27. As a result of this investigation the Naval Aviation Safety Center recommends that:

- a. The Chief, Bureau of Aeronautics take necessary action to provide an adequate fuel filter in F8U aircraft.
- b. The Chief, Bureau of Aeronautics direct that the fuel control filters in F8U aircraft be changed periodically until adequate fuel filtration is provided in these aircraft.
- c. The Chief, Bureau of Aeronautics establish a procedure which requires the manufacturer to purge the aircraft/engine fuel system of contamination prior to acceptance of jet aircraft by the Navy.
- d. The Chief, Bureau of Aeronautics provide F8U aircraft with a low fuel level warning light in accordance with MIL SPEC MIL-F-17874 of 4 January 1954.
- e. The Chief, Bureau of Aeronautics and contractor reevaluate and revise upward the 500-foot minimum ejection altitude specified in Section III of the F8U-1-1P Flight Handbooks.
- f. The Chief, Bureau of Aeronautics provide all aircraft equipped with ejection seats with an acceptable ground-level ejection system.
- g. The Chief, Bureau of Aeronautics revise F8U Flight Handbooks and Handbooks of Maintenance Instructions concerning installation and inspection of the parachute arming wire/ejection seat connection in accordance with BAR Dallas dispatch 101530Z of April 1958.
- h. The Chief, Bureau of Aeronautics revise NAVAER 01-45HHA-507, page 7, item 5 to include the integrated torso harness ejection seat system, and revise NAVAER 01-45HHA-506, page 12, item 36 (d), to require pre-flight as well as daily inspection.

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SUBSTANTIATING DATA

28. The following data pertaining to the independent investigation of this accident by the Naval Aviation Safety Center is on file at the Naval Aviation Safety Center, Naval Air Station, Norfolk 11, Virginia:

- a. Dispatches
- b. NASC Questionnaire
- c. Flight clearance
- d. Maintenance personnel statements
- e. Flight leader's statement
- f. Witness statements
- g. Crash and Fire Report
- h. Disassembly inspection report
- i. Investigation notes
- j. List of personnel participating in investigation
- k. Autopsy Report and Medical Officer's notes
- l. Flight path and wreckage distribution diagrams
- m. Wreckage photographs
- n. Escape and survival equipment photographs

"SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OF OPNAV INST 3750.6B"

FF4-1/A25

Serial:

80/ 6032

SPECIAL HANDLING REQUIRED IN ACCORDANCE  
WITH PART VII OPNAVINST 3750.6B

16 MAY 1958

FIFTH ENDORSEMENT on VF-211 AAR ser 1-58 concerning F8U-1 BUNO 144433  
accident occurring 3 April 1958, pilot FISK

From: Commander Naval Air Force, Pacific Fleet  
To: Chief of Naval Operations (OP-57)  
Via: (1) Chief, Bureau of Aeronautics (MA-61)  
(2) Commander, U. S. Naval Aviation Safety Center  
Subj: VF-211 AAR ser 1-58  
Ref: (a) NASC ltr ser 278 of 8 May 1958

1. Forwarded, concurring in the recommendations of the Aircraft Accident Board, and in the remarks contained in subsequent endorsements.
2. Reference (a) which is the report of a special investigation conducted by the Naval Aviation Safety Center determined the probable cause of this accident to be partial blockage of the fuel control inlet port by shredded pieces of an "O" ring seal which had been left adrift in the engine driven fuel pump causing a flameout.

*Beecher Snipes*  
BEECHER SNIPES  
By direction

Copy to:  
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614

FF7-2/A25  
Ser: 322/ 2216

9 MAY 1958

SPECIAL HANDLING REQUIRED IN ACCORDANCE  
WITH PART VII OPNAV INSTRUCTION 3750.6B

FOURTH ENDORSEMENT on VF-211 AAR ser 1-58 concerning FSU-1, BuNo 144433  
accident occurring 3 April 1958, pilot LTJG R. L. FISK

From: Commander Fleet Air Alameda  
To: Chief of Naval Operations (OP-57)  
Via: (1) Commander Air Force, Pacific Fleet  
     (2) Chief, Bureau of Aeronautics (AER-512)  
     (3) Director, U.S. Naval Aviation Safety Center

Subj: VF-211 AAR ser 1-58; forwarding of

1. Forwarded, concurring in the conclusion and recommendations of the  
Aircraft Accident Board, and in the remarks contained in subsequent endorse-  
ments.

*M. E. Arnold*  
M. E. ARNOLD

Copy to:  
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BAR DALLAS  
BAR EAST HARTFORD  
NAS MOFFETT FIELD

015

# ORIGINAL

FF12/CVG-2

A25

Ser:

143  
APR 28 1950

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OPNAV INST 3750.6B

THIRD ENDORSEMENT on VF-211 AAR ser 1-58 concerning F8U-1 BUNO 144433,  
accident occurring 3 Apr 58, pilot, LTJG R. L. FISK

From: Commander Carrier Air Group TWO  
To: Chief of Naval Operations (Op-57)  
Via: (1) Commander Fleet Air Alameda  
     (2) Commander Naval Air Force, U.S. Pacific Fleet  
     (3) Bureau of Aeronautics (Aer-512)  
     (4) Director, U.S. Naval Aviation Safety Center

Subj: VF-211 Aircraft Accident Report 1-58; forwarding of

1. Forwarded, concurring with the conclusions and recommendations of both the Aircraft Accident Board and the Commanding Officers endorsement.
2. The information contained in recommendations four, five, and six of the basic accident report should be passed to all squadrons operating this type aircraft.

  
J. R. BOWEN II

Copy to:  
NAVAVSAFECEN (2 Airmail) - Direct  
BUAER (Aer-512) - Direct  
CINCPACFLT  
COMNAVAIRPAC - Direct  
COMFAIRALAMEDA (2) - Direct  
BAR DALLAS  
BAR EAST HARTFORD  
CVG-21  
NPU. EL CENTRO  
NAS MOFFETT FIELD  
VF(AW)-3  
NAS NORTH ISLAND  
OO, VF-211

616

# ORIGINAL

03-92

APR 25 1958

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH  
PART VII OF CNAV INSTRUCTION 3750.6B

SECOND ENDORSEMENT on VF-211 AAR 1-58, concerning FSU-1 BuNo 144433,  
occurring 3 April 1958, pilot FISK

From: Commanding Officer, U.S. Naval Air Station, Moffett Field, California  
To: Chief of Naval Operations (Op-57).  
Via: (1) Commander Carrier Air Group TWO  
     (2) Commander Fleet Air Alameda  
     (3) Commander Naval Air Force, U.S. Pacific Fleet  
     (4) Chief, Bureau of Aeronautics (AER-512)  
     (5) Director, U.S. Naval Aviation Safety Center  
  
Subj: VF-211 Aircraft Accident Report 1-58; forwarding of  
1. Forwarded.

*A. S. Hill*

A. S. HILL

Copy to:  
NAVAFACEN (2)  
BUAER (AER-512)  
CINCPACFLT  
COMNAVAIRPAC  
COMFAIRALAHEDA (2)  
BAR DALLAS  
BAR EAST HARTFORD  
CAG-2  
CAG-21  
NPU/EL CENTRO  
NAS/MOFFETT FIELD  
VF (AM)-3  
NAS, NORTH ISLAND  
CO, VF-211

017

STANDARD FORM REQUIRED IN ACCORDANCE WITH OPNAV INST 3750.6B, PART VII

FT12/TF211

A9-8

Ser: 180

18 April 1958

Report of Accident on VF-211 AAC 1-58, concerning F8U-1 BUNO 144433,  
occurring 3 April 1958

To: Commanding Officer, Fighter Squadron FIVE HUNDRED ELEVEN  
Chief of Naval Operations (OP-52)  
Via: (1) Commanding Officer, NAS, Moffett Field.  
(2) Commander Carrier Air Group TWO  
(3) Commander Fleet Air Alameda  
(4) Commander Naval Air Force, Pacific Fleet  
(5) Chief, Bureau of Aeronautics (AEW-512)  
(6) Director, U.S. Naval Aviation Safety Center

Subj: VF-211 Aircraft Accident Report 1-58; forwarding of

1. Forwarded, concurring with the conclusion and recommendations of the accident board.
2. The cause of the accident remains undetermined although some preliminary information concerning Disassembly and Inspection Reports by O and E's, NAS, North Island and US, Alameda indicated definite possibilities of fuel contamination. An amplifying report based on final findings will be forwarded.
3. In relation to the possibility that the flame-out resulted from fuel starvation due to a series of pilot errors in fuel management, it is noted that LTJG FISH was considered a good average aviator with considerable experience in jet fighter aircraft. His record shows one accident which occurred on 6 September 1955 when he landed an F2H-3 aircraft short of the runway on a normal field landing. He had continually demonstrated adequate knowledge of normal and emergency operating procedures for the aircraft - both during pre-flight briefings and on occasions where he had handled in-flight emergencies or minor mechanical discrepancies.
4. In relation to LTJG FISH's failure to accomplish a successful escape it seems certain that either he operated the Emergency Harness Release prior to ejection or the sprung ball and cable actuator for alerting the automatic parachute was not properly installed. Although this officer was present at the same briefings attended by LTJG FISH on the operation of the subject escape system, and is confident he was aware of the proper procedures, it seems most probable that in excitement and confusion the pilot did make the mistake of operating the Harness Release prior to ejection.

SUBJ: RECOMMENDATIONS REQUIRED IN CONFORMANCE WITH OFINW INST 3750.6B, PART VII

TPM2/VP211  
-19-8

- a. Report on recommendations of the Aircraft Accident Board:
- b. First recommendation:  
Concur. This command has made a practice of conducting annual inspections to a slightly more stringent degree than that provided by current directive.
  - c. Second recommendation:  
Concur.
  - d. Third recommendation:  
Concur.
  - e. Fourth recommendation:  
Concur. VP-211 Safety of Flight dispatch 082040Z of 17 Jul 1958 was originated with reference to this recommendation.
  - f. Fifth recommendation:  
Concur. Again this recommendation was a subject of the message referred to in the previous paragraph.
  - g. Sixth recommendation:  
Concur.
  - h. Seventh recommendation:  
Concur.
  - i. Eighth recommendation:  
Strongly concur. The similar appearance of these side-by-side fuel gauges and the ease with which they might be confused is readily apparent. As an interim measure this command will outline the instrument case of the main fuel quantity indicator with a narrow band of white paint.



D. C. DAVIS

Copy to:  
L. VANSAFLOW (2) VP(1)-3  
KEL-EP (AFR-512) N.S., NORTH ISLAND  
C.G.C. (CONT)  
COLONIAL PAC  
CONF. INFLIGHT (2)  
PAR OILS  
B&R EAST HARTFORD  
C.G-2  
C.G-21  
NPU EL CENTRO  
N.S. MOFFETT FIELD

619

## SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OPNAV INST 3750.6B

AIRCRAFT ACCIDENT REPORT  
OPNAV FORM 3750-1 (REV. 11-35)See Instructions for completion  
prior to lifting out

OPNAV REPORT 3750-1

PAGE 1

## PART I - GENERAL

1. AIRCRAFT ACCIDENT BOARD CONVENED BY:		2. DATE OF ACCIDENT	TIME	3. AAR SERIAL NO.
FIGHTER SQUADRON TWO HUNDRED ELEVEN(VF-211)		3 April 1958	1523U	1-58
4. TO:		5. ENCLOSURES: (1) Flight Path Chart		
CHIEF OF NAVAL OPERATIONS (Op-57)		(2) Crash Diagram		
6. VIA: (1) Commanding Officer VF-211		(3) Photographs (3a through 3g)		
(2) Commanding Officer, NAS, Moffett Fld		(4) Statements (1a through 1t)		
(3) Commander Carrier Air Group TWO		(5) Interim D.I.R., Fuel Pump & Control		
(4) Commander Fleet Air Alameda		(6) Local Flight Clearance		
(5) Commander Naval Air Force, Pacific Flt		(7) Medical Offs. Report (Orig AAR On)		
(6) Chief, Bureau of Aeronautics (A&E-512)		(8) Crash Fire Report		
(7) DIRECTOR, U. S. NAV. AV. SAFETY CENTER		(9)		
7. REPORTING CUSTODIAN (if different than item number 1)				

8. KIND OF FLT.		9. TIME OF DAY		11. LOCATION OF ACCIDENT		12. ELEV. ABOVE SEA LEVEL			
DAY		<input checked="" type="checkbox"/> DAWN	<input checked="" type="checkbox"/> DAY	<input type="checkbox"/> DUSK	<input type="checkbox"/> NIGHT	8,25 n. m. 1170 M			
13. PLACE OF LAST TAKE-OFF		from NAS Moffett Tower				1251			
NAS, Moffett Field, California		FROM NAS, Moffett Fld				NAS Moffett Fld			
14. TYPE CLEARANCE:		<input type="checkbox"/> IFR	<input checked="" type="checkbox"/> VFR	<input checked="" type="checkbox"/> LOCAL	<input type="checkbox"/> OPERATIONAL	<input type="checkbox"/> AIRWAYS	<input type="checkbox"/> DIRECT	<input type="checkbox"/> OTHER, <i>Specify</i>	
15. TIME IN FLT.		16. TYPE ACCIDENT		18. PHASE OF FLIGHT (7) Practice					
1 hr 23 min (G-1)		Abandoned aircraft after flame-out		GOA Approach					
19. MODEL		20. SERIAL NO.		21. DAMAGE TO AIRCRAFT		22. DOL. COST			23. AIRSPEC(48) 24. A/C WT.
FBU-1		7111633		<input checked="" type="checkbox"/> A. <input type="checkbox"/> B. <input type="checkbox"/> C. <input type="checkbox"/> D.		\$1,803,500			170 kts, 20,371#
25. LIT. MODEL, SER. NRS. REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED (complete separate OPNAV Form 3750-1 for each A/C)									

1. PERSONNEL		2. NAME (last, first and middle initials)		3. RANK RATE	4. MIL. SERV. NO.	5. DESTD. TO	6. DATE DESTD.	7. DATE OF BIRTH	8. AGE
PILOT/PERSONNEL AT CONTROLS AT TIME OF ACCIDENT		FISK, Robert L.		LTJG (b) (6)	1315	6/3/55	(b) (6)		25

CO-PILOT		NA		10. UNIT TO WHICH ATTACHED					11. TYPE INSTRUMENT CARD	
8. PERSONNEL		9. OPERATIONAL FLT. TRAINER AVAILABLE		VF-211					<input checked="" type="checkbox"/> STANDARD	<input type="checkbox"/> SPECIAL
PILOT		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO See Remarks, page 3							<input type="checkbox"/> STANDARD	<input checked="" type="checkbox"/> SPECIAL
CO-PILOT		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO							<input type="checkbox"/> STANDARD	<input checked="" type="checkbox"/> SPECIAL

ITEM	PILOT	CO-PILOT	STU. PILOT	ITEM	PILOT	CO-PILOT	STU. PILOT
ALL MODELS	1300.4			CV LANDINGS DAY/NIGHT	6/0		
ALL MODELS IN LAST 12 MOS.	199.3			FCLP LANDINGS DAY/NIGHT	168/0		
ALL MODELS IN LAST 3 MOS.	44.6			INSTRUMENT HOURS, LAST 3 MONTHS	4.1		
ALL SERIES THIS MODEL	151.4			NIGHT HOURS, LAST 3 MOS.	8.7		
ALL SERIES THIS MODEL, LAST 12 MONTHS	151.4			TOTAL JET PILOT HOURS (jet accidents only)	796.2		
ALL SERIES THIS MODEL, LAST 3 MONTHS	44.6			DATE LAST FLIGHT, ALL SERIES THIS MODEL	28 March 1958		

NAME (last, first and middle initials)		RANK RATE	SERVICE NO.	ORG. TO WHICH ATTACHED	INJURY CODE	BILLET POS.
FISK, Robert L.		LTJG (b) (6)	VF-211			
4.						
5.						
6.						
7.						

(If additional space is necessary, attach additional sheet(s))

## AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

1. CEILING	2. VISIBILITY	3. AND PRESENCE	4. TEMPER- OUTSIDE RUNWAY & DEP POINT	5. ALTITUDE	6. ALTIMETER SETTINGS
5. 250/0	7 mi.	2500 - 25 kts.	ATURE	55° F 65° F 46° F	29.76"

7. OTHER WEATHER CONDITIONS (winds aloft, icing levels, state of sea, etc., if pertinent to accident)

Winds aloft; 2,000' - 270°/30 Kts.  
1,000' - 280°/30 Kts.

ITEM	P/S	ITEM	P/S	ITEM	P/S
PILOT ERROR		LANDING SIGNAL OFFICER ERROR		MATERIAL FAILURE OR MALFUNCTION	
CREW ERROR		OTHER PERSONNEL ERROR, Specify		MATERIAL INADEQUACY	
SUPERVISORY PERSONNEL ERROR		ADMINISTRATIVE ERROR		ROLLING AND PITCHING DECK/ROUGH SEAS	
MAINTENANCE PERSONNEL ERROR		AIRPORT OR CARRIER FACILITIES		UNDETERMINED	X
SERVICING PERSONNEL ERROR		WEATHER		OTHER, Specify	

FOR ACCIDENTS ABOARD DEPLOYED CARRIERS (Complete following Section on Pilot)

1. DATE DEPLOYED	2. DAY-HOURS/LANDINGS LOGGED SINCE DEPLOYED	3. DAY-HOURS/LANDINGS LOGGED LAST 30 DAYS
N.A.		
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT	5. NIGHT-HOURS/LANDINGS LOGGED SINCE DEPLOYED	6. NIGHT-HOURS/LANDINGS LOGGED LAST 30 DAYS

## PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA

DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO. OF FLIGHT MAULS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE LAST ACCEP-TANCE	TYPE CHECK LAST PERFORMED	FLIGHT HRS. SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK
16 JAN 58	1st.	1	None	N.A.	9.5	Acceptance	5.2	12
	ENGINE MODEL	SERIAL NO. OF ENGINE						

X NO. 1  
X NO. 2 NO. 1  
X NO. 3 NO. 1  
X NO. 4 NO. 1

a. DID FIRE OCCUR?  BEFORE ACCIDENT  AFTER ACCIDENT  DID NOT OCCUR b. DID EXPLOSION OCCUR IN FLIGHT?  YES  NO

c. CHECK IF APPLICABLE  
See attached sheet  
 AMP FOR SERIAL

d. HAS IT BEEN REQUESTED  
 YES  NO

e. FAILED COMPONENTS INVOLVED

See attached sheet

CHECK BELOW ITEMS PRESENT IN THIS ACCIDENT

a. <input type="checkbox"/> AIRCRAFT DESIGN	b. <input type="checkbox"/> UNDETERMINED	c. <input type="checkbox"/> SURFACE FACILITIES
b. <input type="checkbox"/> AIRCRAFT EQUIPMENT	<u>021</u>	e. <input type="checkbox"/> TECHNICAL INSTRUCTION
c. <input type="checkbox"/> MAINTENANCE	f. <input checked="" type="checkbox"/> OTHER, Specify	g. <input type="checkbox"/> HUMAN ENGINEERING (e.g. cockpit configurations)

a. ALTITUDE AT MALFUNCTION	b. AIR SPEED (kts)	c. OPERATING ATTITUDE	d. ANGLES OF	e. C.G./MAC	f. KIND OF FUEL	g. FLOW RATE
2,000'	170	NORMAL	20,374	29.9%	JP-4	Est 4500 #/hr
H. EVIDENCE OF FUEL CONTAMINATION	I. CAUSE OF ENGINE FAILURE OR FLAMEOUT	J. EXTERNAL STORES ABOARD A/C	K. EXTERNAL STORES ABOARD A/C	L. EXTERNAL STORES ABOARD A/C	M. EXTERNAL STORES ABOARD A/C	N. EXTERNAL STORES ABOARD A/C
Dirt, Metal, Lint, and rubber on fuel <input checked="" type="checkbox"/> CONTROL COARSE FILTER <input type="checkbox"/> new or overhauled	contaminated fuel control	Two missile launcher adapters				
Fuel control No. 522184P19, Ser. No. 10621, 25.8 hrs.						

(if additional space is necessary, attach additional sheets)

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OF NAV INST. 3750.6B  
 NAV FORM 3750-1 (REV. 11-68)  
 2E 3

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA (Cont'd)

1. EQUIPMENT USED IN THE ANALYSIS SECTION:												
a.	<input type="checkbox"/> CLEARANCE AUTHORITY	b.	<input type="checkbox"/> RUNWAY									
b.	<input type="checkbox"/> FLIGHT PLANNING INFORMATION SOURCE	c.	<input type="checkbox"/> WATER LANDING AREA	<input type="checkbox"/> EMERGENCY ARRESTING GEAR (Runway)								
c.	<input checked="" type="checkbox"/> LANDING AIDS (GCA, CCA, ILS, etc.)	d.	<input type="checkbox"/> APPROACH ZONE	<input type="checkbox"/> AIRCRAFT SERVICING, HANDLING & DIRECTING (Field or Ship)								
e.	<input type="checkbox"/> TRAFFIC CONTROL TOWER (Field or Ship)	f.	<input type="checkbox"/> END ZONE	<input type="checkbox"/> CRASH AND RESCUE								
g.	<input type="checkbox"/> APPROACH AND ENROUTE AIDS TO NAVIGATION	h.	<input type="checkbox"/> SHOULDER	<input type="checkbox"/> SEARCH AND RESCUE								
i.	<input type="checkbox"/> RUNWAY WATCH	j.	<input type="checkbox"/> TAXIWAY	<input type="checkbox"/> CATAPOULT								
k.	<input type="checkbox"/> LANDING SIGNAL OFFICER	l.	<input type="checkbox"/> PARKING AREA	<input type="checkbox"/> ARRESTING GEAR (Carrier)								
m.	<input type="checkbox"/> OTHER, Specify _____	n.		<input type="checkbox"/> BARRIER OR BARRICADE								
2. EQUIPMENT INVOLVED:		<input type="checkbox"/> CATAPOULT	<input type="checkbox"/> PRESSURE SETTINGS	<input type="checkbox"/> TURNED OVER	<input type="checkbox"/> DECK	<input type="checkbox"/> HEADLINE	<input type="checkbox"/> APPROXIMATE SPEED (SPN-12 READING)					
F. MARK NUMBER & MODEL NO. & LOCATION ON SHIP												
J. CATAPOULT/ARRESTING GEAR BULLETINS OR NOMOGRAMS USED												

K. THIS PORTION SHALL BE COMPLETED WHENEVER (1) A MAJOR AIRCRAFT ACCIDENT INVOLVES MALFUNCTIONING OF ARRESTING GEAR, BARRIER, OR BARRICADE EQUIPMENT, (2) AN AIRCRAFT ACCIDENT INVOLVES MALFUNCTIONING OF ARRESTING GEAR, BARRIER, OR BARRICADE EQUIPMENT, (3) AN AIRCRAFT ACCIDENT INVOLVES DAMAGE TO CABLES, WELDED AND OTHER EXPENDABLE COMPONENTS NEED NOT BE REPORTED.

2. SHIPS DATA	ENGAGED	DECK RUMOUT TRAVEL (FT.)	RAM TRAVEL (IN.)	CONTROL VALVE SETTINGS			ACCUMULATOR PRESSURE (PSI)	COMMENTS (for cable failure specify number of badlines and months in service)
				CONSTANT PRESSURE DOME (P.S.I.)	RATIO	CONSTANT RUMOUT (WT. LBS.)		
	DECK PENDANT							
	DECK PENDANT			Not Applicable				
	BARRIER							
	BARRIER							
	BARRICADE							

3. PART III - REMARKS (continue on separate pages if necessary)  
 B-9 FLIGHT SIMULATOR TIME THIS MODEL: TOTAL-0, LAST 12-00-0, LAST 13-00-0  
 Procedures trainer time in model: total-4 hr, last 12-00-0 hr, last 3-00-0 hr.  
 Note: Flight simulator not available. Procedures trainer used when it was at Moffett during round training phase of transition  
 trainer in June 1957.

A 22 Property damage to houses, fruit trees and strawberry plants estimated to be \$3,500.00 by Public Works Officer.

A 6 Loss to: NAVFAC, CIVIL AIR COMM, CIVIL AIR COMM, CIVIL AIR COMM (2), NAVFAC (AM-512), 301 DALLAS, BAR EAST HARP. ORD, O&D 2, C.G. 21, NAVFAC, CIVIL AIR COMM, 1000 FT. V-11-3, 1000 FT. ISLAND (O&D).

PART IV - SIGNATURES (INDICATE DATE SUBMITTED TO: 18 JUN 1958)

OP-2470-3

USN OFFICER

UNIT BILLET

(b) (6)

(b) (6)

(b) (6)

SUBJ

OFFICER

UNIT BILLET

ADJ.

OFFICER

UNIT BILLET

(Flight Surgeon member)

(b) (6)

## AIRCRAFT ACCIDENT REPORT

## PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA (CONT'D)

- a.  CLEARANCE AUTHORITY
- b.  FLIGHT PLANNING INFORMATION SOURCE
- c.  LANDING AIDS (GCA, CCA, ILS, etc.)
- d.  TRAFFIC CONTROL TOWER (Field or Ship)
- e.  APPROACH AND ENROUTE AIDS TO NAVIGATION

h.  RUNWAYi.  WATER LANDING AREAj.  APPROACH ZONEk.  END ZONEl.  SHOULDERd.  EMERGENCY ARRESTING  
GEAR (Carrier)e.  AIRCRAFT SERVICING, HANDLING & DIRECTING (Field or Ship)f.  CRASH AND RESCUEg.  SEARCH AND RESCUEh.  CATAPOULTi.  ARRESTING GEAR (Carrier)j.  BARRIER OR BARRICADE  
(Field or Ship)k.  FLIGHT DECKl.  DRIVING  
REAR  
WHEELS  
M.  ROLLER AND CONFIGURATION USEDN.  INVOLVES ARRESTING GEAR.  
FUNCTIONALITY OF ARRESTING  
GEAR  
DAMAGE TO CARRIER, FIELDCOMMENTS  
for cable failure specify  
number of stations and  
months in service1180-3-207-00  
AT, last  
P-11  
traction

as indicated

2, 10  
3).

APR 18 1958.

NOV

JULY

UNIT BILLET

ATT. BRIT

(b) (6)

SPECIAL EDITION REQUIRED IN ACCORDANCE WITH PMAV INST-3750.6B PART VII  
THE ACCIDENT

PART V

The Accident

LtJG (b) (6) in F8U-1, BuNo 144442, and LTJG R.L. FISK in V-11-1, BuNo 144433, took off from NAS, Moffett Field, California on 3 April 1959 on a scheduled 2-hour instrument training mission. The section was airborne at 14000 with LTJG (b) (6) as section leader.

Individual take-offs in afterburner and a section rendezvous during the climb to altitude were made. At 45,000 feet each pilot made an engine acceleration check. Upon completion, the lead was passed to LTJG FISK for instrument training at altitude and a practice jet penetration at Moffett. LTJG (b) (6) assumed the lead during the practice penetration and cancelled the penetration because VFR conditions could not be maintained throughout the let-down. After cancelling the let-down, the section leader established contact with Moffett GC, and completed three practice GCA's through low approach. Following completion of the third GCA, the lead was passed to LTJG FISK. FISK completed one GCA through low approach and was on the final approach of the second GCA at approximately three miles when he received instructions to wave off because of conflicting traffic. Wave off instructions were to make a right turn to downwind leg, heading 180° magnetic, and to climb to 2,000 feet. LTJG FISK acknowledged and complied. After turning to downwind leg, flight conditions were: 170 knots IAS, 2,000 feet indicated altitude, wing up, landing gear down, and speed brakes retracted, with LTJG (b) (6) flying the GCA chase position. At this point LTJG (b) (6) requested a fuel check. LTJG FISK did not acknowledge. LTJG (b) (6) then reported taking the lead and cancelled the GCA because of rain squalls approaching the area. He intended to return the section to Moffett and land. As LTJG (b) (6) came up ahead of LTJG FISK, LTJG FISK's aircraft began to fall astern at an unusual rate and began to lose altitude. Reported calls by LTJG (b) (6) were not acknowledged by LTJG FISK. LTJG FISK's airplane continued in the descent to an estimated altitude of 1,000 feet, where LTJG (b) (6) saw the canopy leave the airplane. LTJG FISK ejected at about 900 feet. The airplane assumed an increasing nose-down attitude as its path toward the ground progressed. The airplane struck the ground and exploded and burned in a fruit orchard. The airplane canopy and ejection seat both struck houses along the flight path causing minor damage. LTJG FISK was killed when his body struck the ground in a strawberry field with the parachute still encased in the chute pack.

PART VI

Damages to aircraft (See enclosures 3a through 3h).

023

The aircraft struck the muddy earth of the fruit orchard in a wings-level, nose-down attitude at an angle of approximately 80 degrees. The wing was down and locked, cruise drop extended, emergency power package retracted, and the landing gear in a partially retracted condition. The nose section made contact with the surface at an estimated 220 knots. The heavy engine section drove forward, disintegrating the entire forward and center fuselage sections and the center wing section. The fuel cells were ruptured and fired during the disintegration, causing a low order detonation which showered wreckage around the impact center. The most noticeable force of the explosion was directed on a heading of approximately 195 degrees from the impact point, where pieces of the starboard, forward, and center fuselage sections were found along with quantities of fresh earth and mud from the impact crater. The wing leading edges were buried in the mud and soft earth in the approximate attitude the airplane struck the ground. The force of impact drove the wing approximately two and one-half feet into the ground causing extensive destruction of the wing leading edges and wing roots. Pieces of the top wing skin were ripped off back to the wing main

spar and were carried forward 20 to 30 feet along the direction of flight. The aft fuselage section, following the destruction of the forward fuselage, toppled over along the direction of flight and came to rest on the vertical fin and port unit horizontal tail. The vertical fin sustained extensive damage at the base of the leading edge and was ripped by flying wreckage near the tip from the leading edge aft. The starboard unit horizontal tail was relatively undamaged. The port unit horizontal tail separated along the center spar and the tip casting was broken off. The engine forward compressor section showed accordion type bends of the case around its circumference. The leading edge of the case was split in several places. A large section of the case was ripped off on the starboard side. The compressor blades were smashed extensively on the port side of the engine. The remainder of the blades were generally bent opposite to the direction of rotation. Third stage compressor blades showed "Z-ing". The engine accessory section drive train case was broken and cracked at one corner. Part of the case was destroyed by fire but the gear trunnions intact. The fuel control was intact. The electrical connections and temperature sensing element were destroyed by fire following the crash. The engine driven fuel pump was intact. The afterburner was crumpled extensively and was accordion plated around its circumference to a large degree.

The engine and accessory section was released to O & R, NAS, North Island for D.I.R. The fuel quantity gauge, exhaust temperature gauge, oil pressure gauge, pitch trim actuator, engine tachometer indicator, and its speed indicator were released to O & R, NAS, Alameda for D.I.R. The ejection seat will be shipped to Air Crew Equipment Laboratory, Philadelphia, Pa., as requested by phone call from BUAFER. The parachute will be shipped to the Naval Parachute Unit, El Centro, California, as requested by Commander LONG of that organization. The remainder of the wreckage will be released to the Supply and Fiscal Officer, N.S., Moffett Field for scrap and salvage.

#### PART VII

##### The Investigation

The crash occurred at 1523U on 3 April 1958. The location of the crash site was 117 degrees magnetic, 8 $\frac{1}{4}$  nautical miles from NAS, Moffett tower. Flight Path Chart (Enclosure 1) and Impact Area Chart (Enclosure 2) further define the exact location.

The Commanding Officer was promptly notified by NAS, Moffett Operations Duty Officer and departed for the scene accompanied by the squadron Safety Officer and Administrative Officer. They arrived at 1555U.

A three-unit Moffett Field crash crew was dispatched for the scene and arrived at 1545. See Aircraft Crash Fire Report (Enclosure 3).

The first officials to arrive at the scene were police officers from the Santa Clara County Sheriff's Department. Official report by that department is contained in their files as "Crime Report 50-2353", dated 4 April 1958 (not enclosed herein). 624

The Burbank Fire Station sent fire equipment very promptly, which was the first crash or fire fighting apparatus to arrive at the scene.

The Santa Clara County Hospital, about three blocks distant, dispatched an ambulance, which arrived after the civilian firemen.

By-standers were numerous and considerable traffic congestion resulted. The police officers first on the scene, as subsequently reinforced, were exceptionally efficient, cooperative, and well organized and did much to assist in an unobstructed preliminary investigation. Shore Patrolman and military crash guard also assisted in keeping the crash site clear.

Preliminary crash analysis was completed at the scene between

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH OPNAV INST 3750.6B, PART VII

1900 and 1900. It was then determined that in the interest of removing a curiosity from a relatively heavily populated civilian area, it would be preferable to salvage the aircraft and conduct detailed analysis at the scene. Sufficient diagrams, photography, and investigation had already been completed at the scene. The Commanding Officer, VF-211, therefore requested that NAS, Moffett Field salvage crew commence immediate salvage of the wreckage. This was expeditiously and efficiently accomplished although the terrain was very muddy from recent heavy rains.

The wreckage was removed to Hangar 2, NAS, Moffett Field, by 1 April and laid out in the standard manner adjacent to air group 2000A.

Aircraft damage and parts distribution at the crash site have been described in Part VI. Enclosures 1a through 1g depict the scene prior to salvage operations. The canopy, seat, and pilot came to rest at the following true bearings and distances from the impact point:

Canopy: 031 degrees, 8681 feet

Seat: 036 degrees, 368 feet

Pilot: 098 degrees, 366 feet

b. Impact Area Chart, Enclosure 2.

The canopy struck a porch corner, the seat struck a roof top, the pilot fell in a strawberry field, and the aircraft crashed into an orchard. Preliminary civil claims are, respectively:

a. No claim to be filed

b. \$0.00

c. Approximately \$3500 for both crop and orchard damage.

Specific findings at the crash site revealed the following aircraft configuration at the time of impact:

a. The variable incidence wing down and locked

b. The cruise droop was extended

c. The emergency power package was in the stowed condition

d. The landing gear was partially retracted (determined by positions of the landing gear actuation cylinders).

e. Speed brakes were retracted.

There was no evidence of a light fire or explosion. There was moderate to heavy smoke and no fresh fire damage. The odor of fuel was strong in the orchard and disappeared an hour after it occurred.

Findings related to the cause of the accident are covered later in the investigation report. A summary of further analysis

of the accident is as follows: The pilot was flying a current medical examination flight during the brief unescorted mission. During the brief unescorted mission, the aircraft was selected by the pilot to conduct a low level flyby of the runway fuel control system. The aircraft was operating

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1600 and 1900. It was then determined that in the interest of removing a curiosity from a relatively heavily populated civilian area, it would be preferable to salvage the aircraft and conduct detailed analysis at the squadron. Sufficient diagrams, photographs, and investigation had already been completed at the scene. The Commanding Officer, VF-211, therefore requested that NAS, Moffett Field salvage crew commence immediate salvage of the wreckage. This was expeditiously and efficiently accomplished although the terrain was very muddy from recent heavy rains.

The wreckage was removed to Hangar 2, NAS, Moffett Field, by 1 April and laid out in the standard manner adjacent to air group spaces.

Aircraft damage and parts distribution at the crash site have been described in Part VI. Enclosures 1a through 1g depict the scene prior to salvage operations. The canopy, seat, and pilot came to rest at the following true bearings and distances from the aircraft impact point:

Canopy: 011 degrees, 681 feet

Seat: 036 degrees, 348 feet

Pilot: 098 degrees, 366 feet

See Impact Area Chart, Enclosure 2.

The canopy struck a porch corner, the seat struck a roof top, the pilot fell in a strawberry field, and the aircraft crashed into an orchard. Preliminary civil claims are, respectively:

a. No claim to be filed

b. \$40.00

c. Approximately \$3500 for both crop and orchard damage.

Specific findings at the crash site revealed the following aircraft configuration at the time of impact:

a. The variable incidence wing down and locked

b. The cruise droop was extended

c. The emergency power package was in the stowed condition

d. The landing gear was partially retracted (determined by positions of the landing gear actuation cylinders).

e. Speed brakes were retracted

There was no evidence of in-flight fire or explosion. There was moderate to heavy crash and post-crash fire damage. The odor of fuel was strong in the vicinity of the crash an hour after it occurred. 625

Findings relating to the pilot's escape system are covered later in the investigation, as are the results of further analysis of the wreckage after salvage.

Investigation of the pre-flight and flight phase of the accident revealed the following information. LMG FISK had a current medical clearance for full flight status, class I. His assigned mission was properly authorized, scheduled, and briefed. During the briefing for the flight in question he was coincidentally selected by the flight leader to answer questions about and describe procedures contained in ALNAVIRPAC 25, which concerns flame-out or thrust loss and back-up features of the manual or emergency fuel control system. He demonstrated satisfactory knowledge to the squadron Operations Officer, who observed the briefing.

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The local flight clearance for (Enclosure 6) was filled out by [REDACTED] (b) (6) the flight leader. After individual take-offs, the section conducted section instrument training.

Flight was conducted as described in the statement of LTJG (b) (6) (Enclosure 4a) and as discussed in Part V, "The Accident".

Deceleration checks referred to were in conformance with COMMNAV message 252057Z of March 1958 as amended by COMMNAVIRPAC message 282204Z of the same month. All squadron aircraft were conducting this check on the operation of the fuel control by observing time to accelerate from idle to MRT at 45,000 feet and 200 knots IAS. It is noted that LTJO FISK reported the results of this check to his section leader as being 30 seconds for Bureau Number 144433.

When the pre-takeoff VFR and section penetration was commenced with LTJO FISK leading, the section leader elected to discontinue at about 13,000 feet because he could not maintain VFR conditions. The lead was therefore exchanged, entry was made into the Moffett Field GCA pattern, and LTJO FISK flew chase position for three VFR practice approaches. The lead was exchanged and LTJO FISK flew one final pass with LTJO (b) (6) as chase pilot. Refer to Flight Path Chart (Enclosure 1). On LTJO FISK's second pass he was waved off at Point A in final approach to reenter the GCA pattern. This required a climbing right turn in the landing configuration from about 900 feet at initial wave-off point to 2,000 feet on the downwind leg, heading 110 degrees N. Point B in the diagram indicates probable power reduction for downwind ILS of 170 knots. Near Point C, the chase pilot (and section leader) requested fuel state and received no acknowledgement from LTJO FISK. Thereafter the flight became abnormal. LTJO (b) (6) had determined to clean up the aircraft, take the lead, leave the GCA Pattern, and enter initial point for final landing. He made a brief transmission to this effect. His fuel state was about 2500 pounds at this time. The reason for his decision was to avoid approaching rain showers. LTJO FISK did not acknowledge this transmission. Until the request for fuel state immediately before, he had answered all airborne transmissions.

It is noted a pre-flight ground radio check had required temporary rechecking before the aircraft left the line, but that no further difficulty had been encountered until the fuel check.

At Point C in the pattern Bureau Number 144433 (Modex 109) decelerated and commenced controlled descent. Nothing was heard from the pilot. The recorded tape in the GCA compound was examined in detail, but it was valueless, being completely unreadable. The GCA controller (see Enclosure 4b) verified LTJO (b) (6)'s description in all details and could offer no further information. No evidence of any abnormalities in GCA control was discovered and therefore Moffett Field GCA is not considered "involved in the accident", in spite of the fact that the accident occurred just after discontinuation of GCA control.

It is noted that LTJO FISK was concentrating inside the cockpit when his section leader passed ahead to assume section lead. This coincided with initial abnormal deceleration before descent commenced. Thereafter the aircraft lost altitude and increased nose-down attitude.

LT (b) (6) (Enclosure 4b) heard the engine of 144433 decelerate from his position on the ground; this first attracted his attention to abnormal flight conditions in the section he had previously only casually noticed. Except for LTJO (b) (6), he is the only known witness who observed difficulty prior to the detonation of the ejection seat charge. Other witnesses on the ground were located at positions as indicated in Enclosure 2, and were first attracted to the incident by the firing of the seat, the noise of the aircraft at low altitude, or the explosion on impact. LT (b) (6) who was closest directly under the flight path, was positive he heard the engine "unwind". He is considered a well qualified witness. LTJO

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(b) (6) stated that the exhaust appeared to decrease and that the aircraft emitted a puff of fuel or smoke in conjunction with its abnormal loss of airspeed. This evidence is strongly indicative of a flamed-out engine at Point C. Points D and E in the enclosure are self-explanatory.

No fire, explosion, or other malfunctions in flight were indicated by any reliable witness. The aircraft was in controlled flight, though losing altitude, until the pilot ejected, which was estimated at about 900 feet. It continued on a flight path of 157 degrees true, with increasing dive angle, until it struck the ground at about an 80 degree angle and impacted as previously described.

The pilot was seen to eject from the aircraft and to obtain seat separation, but an item of paramount interest is that the parachute was not actuated manually or automatically during his descent. This is supported by the following findings: MP. (b) (6) (Enclosure 4c) found that the chute was activated while he was dragging it away from the scene and stated that it was still in the pack when being removed from the pilot's body.

The Irvin MK V barometric release was not actuated, as indicated by the following:

a. The automatic parachute actuator arming cable was still in place. The arming wire, bent by impact, can be seen in enclosure 3m and 3n, still in the unarmed position.

By way of explanation: The swaged ball (Enclosure 3) at the opposite end of the arming wire is normally seated in the emergency harness release handle housing and held in place by the release handle spring - loaded plunger. As the pilot (and chute) effect seat separation after ejection, the ball is retained in its housing by the emergency harness release handle (on the seat). This extracts the arming pin from the Irvin barometric release, which is armed after 3 seconds mechanical time delay (for pilot deceleration). After the time delay, and when below the pre-set altitude (10,000 feet in this case), the power cable is released from spring compression and pulls the pins from the cones, thus allowing the chute to deploy from automatic initiation.

b. The emergency harness release handle (called "ditching handle") was first found cut of its housing on the right of the seat. It was hanging from the cable which activates the linkage to release the harness.

c. Except for impact damage nothing could be found which would restrict the arming cable from being pulled out of the barometric release and free of the chute - provided the ditching handle had remained in place, therefore retaining the ball end of the arming cable.

The ditching handle appears to have been released by the pilot as supported by the following:

a. Complete handle assembly was in good condition (as was the whole seat).

b. Attachment cable between handle and release mechanism was visibly crimped at a point where it passes over the seat bucket side when the handle is pulled clear of its housing (Enclosures 3i through 3k). This could have occurred on ejection (with the handle free) or on impact. It should not have occurred if the handle had remained stowed.

c. The rim of the seat (Enclosure 3j) showed scratches as could be caused by the abrasive forces of the cable at the crimp. No other portion of the seat showed such markings.

In order to determine whether the ball might have been seated

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In the ditching handle improperly, a detailed check was made. There was a light scratch on the rugged ball but no visible stress markings on the handle at the ball socket. The handle still functioned normally and the ball still seated if properly installed. Possibility of improper installation cannot be discounted, however.

The parachute was not actuated manually. This is supported by the following:

a. The loop end of the automatic power cable was found still attached around number one pin of the pin and cone assembly (Enclosure 3o). The loop is shown in the enclosure at the actuated position. This is because the power cable spring housing fractured and allowed the cable to retract the loop (Enclosure 3n). The pins are shown, therefore, in Enclosure 3o in a similar position as if the automatic feature of the chute had functioned. If the other release cable (manual) had been first pulled, the power cable loop would not be around the pin even though impact fracture allowed the power spring to retract the pins.

It is therefore indicated that neither automatic or manual release functions were employed on the brief descent from a very marginal altitude.

It is further indicated that the chute was first activated either from impact when the power cable housing was fractured and spring compression released, or that in dragging the chute, the housing then parted allowing power spring release. In the former instance the position of the body and the chute could have prevented the deploying of the pilot chute. In any event, the chute was first observed to open when being dragged from the scene.

The above support strong contention that the pilot erroneously activated his emergency harness release handle sometime before seat separation occurred, thereby nullifying the automatic feature of the parachute, and further, that the pilot did not pull the manual "D" ring.

Emergency egress equipment included:

a. FBU-1 ejection seat as modified by ASC 158 with ejection cartridge MK1, MOD 0, Lot 551-5-57, which fired normally.

b. Anti-harness release cartridge MK3, MOD 0 with .75 second delay, Lot 3M. Date opened, January 1958; expiration date, June 1959. The firing pin was the stab type in accordance with current directives. This equipment fired normally. The pins were retracted for proper harness release, but probably by pilot's activation of the ditching handle.

The parachute was NB7, serial 103155. Packing data: "1/20/58 packed and inspected and MK V opener # 7386 installed. Altitude 10,250! Delay 3.4 seconds (El Centro)." "3/22/58 repacked and inspected. Complied with AGCIR 21-57, 25-57, 17-57 (VF-211).

Personal equipment was as listed in Medical Officer's Report (Enclosure 7).

The Al3A oxygen mask was inspected and cleaned on 3/29/58. Oxygen was not suspected as a factor because of LTJG FISK's normal performance on previous GCA passes and because the altitude was low thereafter.

Pilot's injuries and damage to personal equipment are described in the Medical Officer's Report.

Engine and airframe data are contained on page 2 and Enclosure 8g. No discrepancies were found. It is noted that fuel strainers on the fuel control were checked in accordance with current directives.

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No discrepancies were discovered in pre-flighting or servicing UH-13 before its 1st flight. See Enclosure 1A. The yellow sheet was in order and previous discrepancies were as listed in Enclosure 1A. Records at the Moffett Field refueling pits substantiate a full fuel load (1,114 gallons were received after the previous flight). LMC (b) (6), the section leader, returned to the pits with 2,011 pounds of fuel after the accident. His altimeter indicated 10 feet less than Moffett Field elevation.

Gross field examination of the wreckage in Hangar 2 revealed the following:

The fuel control was intact, but the temperature sensing element and electrical connections were burned excessively. A large amount of shredded, black substance was found in the fuel inlet elbow to the fuel control.

The engine driven fuel pump was intact.

The accessory drive angle gear box and drive shaft received crust damage but appeared in fair condition. Slight indentation and wiring on the shaft splines indicated relatively low RPM at impact.

The first stage rotor displayed some anti-rotational bending of a disc indicating low RPM.

The third stage turbine did not disclose evidence of heat distress or crystallization.

The main oil filter contained some bright metal chips. The filter disc aspirator was partially melted by fire and shot-like pellets from it were found on the outside of the filter body and in the cavity.

The master fuel shut-off valve was open.

The manual wing fuel shut-off valve was open.

A D.I.R. of engine and accessories was requested from O & R, NAS, North Island.

LCM (b) (6) and LCM (b) (6) having arrived from the Safety Center at 230, 5 April, to conduct an independent investigation examined the wreckage on 6 April and thereafter contributed valuable experience, which was of considerable benefit to the board. Their capable assistance and willing cooperation is gratefully acknowledged. They departed for Norfolk on 13 April.

LCM (b) took the fuel pump, fuel control, and accessories drive gear box to NAS, North Island on 7 April in order to expedite preliminary findings on the D.I.R.. 29

The engine was subsequently shipped to O & R, North Island, arriving on 14 April. The formal D.I.R. will follow, when completed, and will receive standard distribution referencing this AIR.

Certain instruments were shipped to O & R, NAS, Alameda for D.I.R.. They will be discussed later.

Request was made to COMNAVAIRPAC for an extension of 7 days in submission of this AIR in order to obtain more complete preliminary D.I.R. information, since the interim findings were expected to confirm suspected primary causal factors. This request was disapproved. The board then exerted every effort to obtain as much information on this subject as possible in order to submit on time a more complete report, which would be of greater value. Acquiring the below information resulted in a submission delay of 2 days in spite of every effort to be on time as directed.

Enclosure 5 reports interim findings on the fuel control and fuel pump from O & R, North Island.

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The fuel control was not in the emergency condition but was set for normal automatic metering functions.

The fuel control was conditioned for non-after burning operation.

The fuel pump screen was clean. The drive shaft and shear sections were all intact. The relief valves were not pressure tested but were cleaned as far as could be determined. The pump engine stage was in good condition. The gears were excellent with no wear on the teeth. The gears had made slight contact with the internal diameter of the pump housing bore opposite the pressure side. The gear and plate were very good. The load plate was worn on very small areas and the relief cuts showed very slight erosion at the edge of the slots. It barely took off the sharp corners of the slots. The A/B stage of the pump was in good condition, the gears had some wear on the teeth, the load plate being about the same as the main engine stage. The gears had made minor heavy contact with the internal diameter of the bore. Contact was approximately 75% of the bore area. This condition is reported as normal.

The pump transfer valve was in good condition. The check valves were in place and in operating condition. Pieces of frayed or shredded rubber were found in the vicinity of the A/B transfer valve assembly - 255017. One piece one inch long was shredded but appeared to be part of an "O" ring approximately 1 inch in diameter. There were also several small pieces. Additional pieces of rubber were found in the alloy of the A/B return fuel tube. All "O" rings in the transfer valve were accounted for and were not shredded or cut. Seals at the connection tubes were not received at O & R but were all accounted for and reported to be in good condition.

The fuel control fuel inlet elbow had considerable rubber particles in it. The fuel control coarse filter contained no rubber but did appear to be 25% contaminated with lint, metal particles, and dirt or gum. It was sufficiently contaminated to by-pass. The coarse filter was clean, but the fine clearance was beyond tolerance. All internal mechanism of the control was in good condition and apparently had been functioning normally. There was, however, a slight turning on one of the pilot valves in the control, which was the only indication of possible stoppage. All seals were intact, except one seal on the normal system pressure regulating valve had a small nick approximately  $\frac{1}{4}$  inch long, and one seal on the valve plunger of the shut-off and minimum pressure valve was frayed. It is doubtful if any pieces were missing. Regardless these could not have been returned to the fuel control mechanism since it is located at the exit of the fuel control.

The accessory drive angle gear box gears and drive shaft received crash damage but were otherwise in good condition.

To summarize, no cause or indication of malfunction was found in the preliminary analysis of the fuel system.

The origin of the rubber heavily distributed in the pump transfer valve and fuel control inlet elbow has not been determined, but it appears that it could not have been introduced except from having been in the pump cavity from assembly of the pump. This of course is not conclusive at this stage and must be determined after submission of the D.I.R..

The following parts of the wreckage were sent to O & R, Alameda for D.I.R., and the below preliminary report has been received:

- a. Trim actuator - Still operable and in good condition. Found in full retracted condition. This is not considered significant.
- b. Exhaust temperature indicator - Unable to evaluate because of damage. Dial indicated 565 degrees C, but not necessarily signifi-

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ficient.

- c. Air Speed indicator - Unable to evaluate because of damage.
- d. Oil pressure indicator - Same
- e. Tachometer - Same.
- f. Main fuel quantity indicator - Wiper arm on potentiometer indicated main system "fairly near to full".

The transfer fuel quantity indicator could not be located in the salvaged operation and was not available for analysis.

For information concerning the history of the pilot, qualification, flight data, and psychological and physiological factors that have not been covered, refer to pages 1 and 3 and Enclosure 7.

PART VIII  
THE ANALYSIS  
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FH-1, BuNo 144433 flamed-out on the downwind leg of the 30A pattern after completing the wave-off on the fifth practice approach by the section. This is conclusive from what developed in the investigation.

Consideration of evidence indicates the flame-out was the result of fuel system malfunction, fuel contamination, or fuel mismanagement. Mismanagement is considered the least likely of the three. Final determination of the cause will be forwarded upon completion of Disassembly and Inspection Agents now in progress on the engine, engine driven fuel pump, fuel tank, and certain instruments. There is no evidence now available to indicate malfunction of the fuel system or of mechanical malfunction. The cause is therefore considered unlikely and it will not be dealt with further.

From initial examination of the fuel control and fuel pump, and preliminary investigation, the most probable cause of the flame-out appears to be fuel contamination. All major accessories were removed from the engine, leaving the components to O&R in order to facilitate handling and to prevent possible damage of the fuel control and pump during disassembly. After removing the fuel control inlet line from the fuel pump, a large quantity of black contaminant was discovered in the right angle elbow fitting into the fuel control. Interim report of disassembly and inspection of Hamilton, JFC 12-2 fuel control, serial 10621, Part No. 52109219 and Pulse dual fuel pump, serial 2617, Part No. 022935-010-02 indicates the black contaminant as one or more ground-up O-ring seals. The pump and control were new items with less than 25 hours of service. The exact type of the "O" ring seals is unknown, but since the interim report (Enclosure 5) stated that all seals in the pump and control were in place it is believed that the only way the extra seal or seals could have entered the system was during the assembly of the item. It appears too coincidental that just before a flame-out occurred, an "O" ring (or rings) was apparently caught in the pump burner, shreaded, and passed on through a localized, localized portion of the system. The important results of pressurization are pressurized. The cap valve and the burner nozzles are not damaged at this time, but the board believes some contamination will be found thereon. The reason is that the 25% clogging of the 200-mesh screen filter in the fuel control from non-rubber contaminant alone was found to be sufficient to 1-pass fuel flow and to flush contaminants from the filter. With the nearly fine gauges of the localized rubber component being almost the coarse filter, it seems probable that 1-pass fuel flow is assured. It is noted that the end clearance of the coarse filter was beyond tolerance and could have passed some contaminant even though the filter was found to be clean.

The mere contaminant was not found in the fuel control and exactly what caused the flame-out is beyond the cognizance of the board and must necessarily remain for the D.I.R. It is felt, however, that contamination will be the listed finding.

The possibility, though remote, of the pilot's mismanaging fuel transfer does exist. If the fuel transfer switch had been placed in the "pressure dump" position when the aft cluster cell went dry, approximately 2,000 to 2,500 pounds of fuel would not transfer from the wing tank into the main fuel cell and therefore would not be available to the engine. Immediately prior to the accident the other airplane in the section had 2,500 pounds of fuel remaining. This bears further discussion.

To elaborate on the previous paragraph, the following explanation of the fuel system must be considered from a human engineering standpoint. Cockpit instrumentation for this particular airplane concerning fuel transfer consists of two capacitance fuel gauges of identical size and located side by side in the right center section of the instrument panel. The gauge on the left indicates main cell quantity and is graduated to 5,500 pounds. A small paper decal on the lower face of the instrument indicate "main" or "trans". Fuel transfer is accomplished through a three-position toggle switch located above the transfer fuel quantity gauge. The top position of the switch is the "fuel transfer on" position. With the switch in this position the wing fuel cell is pressurized and the aft cluster fuel cell transfer pump is energized. With the switch in this position, fuel is transferred to the main cell at a nearly equal rate from both the wing and aft cells. The center position of the switch is

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the "pump-off" position. With the switch in this position, the wing cell is pressurized for transfer and the aft cluster cell transfer pump is off. The third (lower) position of the switch is the "press dump" position. With the switch in this position, the aft cluster cell transfer pump is off, and the wing pressure is "dumped" or reduced to ambient, stopping further transfer from the wing for all practical purposes. An amber warning light is located adjacent to the three-position switch. This light glows when the aft cluster cell transfer pump discharge pressure decreases to zero with the toggle switch in the "fuel transfer" position. The light is marked "turn pump off", and is an indication to the pilot to take the toggle switch out of the "fuel transfer on" position in order to avoid overheating the pump. The light goes out when any other position is selected.

Standard operational procedure is to select "fuel transfer on" after take-off. Assuming nearly equal flight times from the aft cluster cell and the wing cell (one 3.5 pounds per second fuel for JP-4 weight), the aft cluster transfer will be completed in 10 minutes. The "turn pump off" light would glow when about 2,000 and one-half pounds of fuel remaining in the wing cell; the switch is then placed in the "dump off" position until the remainder of the wing fuel is transferred. Completion of wing fuel transfer is indicated by the transfer gauge reading zero. Following completion of wing fuel transfer the toggle switch is placed in the "press dump" position. The problem exists that when the "turn pump off" light comes on, the pilot might move the switch to the "press dump" position and thereby lose a sum of two remaining 2,000 to 2,500 pounds of wing fuel. Considering the amount of the toggle switch in the "press dump" position, it must be noted that it is difficult to place the switch in this position inadvertently because of an extra force required by the design of the "pull-on" toggle switch to place it in the "press dump" position. The only chance possibility is that the pilot pump only placed the switch in the "press dump" position, anticipating a requirement for dumping fuel prior to landing and then subsequently struck the indications of the transfer gauge at 10 and cell dump. This, however, calls for a compounding of errors and is considered remote.

~~Findings of evidence of the cause of the investigation reveals no malfunctions of the operation of the canopy, seat, harness release, or parachute. These supporting are:~~

- a. The ejection seat cartridge functioned normally.
- b. The canopy jettisoned satisfactorily.
- c. The automatic harness release fired normally.
- d. Pilot-seat separation was normal and uninhibited by survival equipment or parts of the aircraft.
- e. The automatic parachute release (Irvin MK V) was not armed or activated before ground impact.
- f. The parachute was not activated manually before ground impact.
- g. The harness release mechanism functioned normally.
- h. The pilot struck the ground with the parachute still encased in its pack.

The over canopy harness release handle was found out of its receptacle. Facts developed in the investigation and the medical officer's report show strong indication that the pilot activated the release prior to ejection. This could have been caused by ignorance of its function, panic action, or an attempt to expedite seat separation. Assuming normal intelligence and pilot interest in the airplane, and considering detailed survival briefings on general ejection information as well as specifically this modification of the seat (all of which LTG FISK attended), the likelihood of ignorance of its function is thought to be fairly remote. This can not be discounted, however. The recent acceptance of new aircraft having the modified seat did present the need for pilot adaptation to new ejection procedure planning. This always requires additional emphasis in training, and if so felt by the board that adequate

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motivation and training had been provided the pilot in this case.

The possibility also exists that the ball on the automatic barometric release arming wire was not properly placed in the ditching handle slotted lanyard plunger, or that the spring loaded plunger of the handle was not fully seated. Although a small groove was found on the swaged ball of the arming wire, no evidence could be found to support either finding. Examination of other aircraft disclosed similar scratches on this ball. The possibility remains, however, that the swaged ball might have been held in place against, but not in, the plunger and thus pulled out of the hole which it contacts the Irvin device. In this regard, BAR, Dallas message 101530Z of April 1958 recommended sound pre-flight check procedure to prevent such a possible occurrence.

Possible reasons for failing to actuate the chute normally are: blackout at ejection, disorientation and confusion for such a short fall, disturbance of habit pattern due to relocation of the manual "D"-ring to the left shoulder of the improved torso harness.

It is considered that the altitude of ejection is considered highly marginal in view of the low chances of survival, even though every item functioned as designed or average calculated time. The board does not intend to infer by treatment of this aspect that the pilot would have survived otherwise. This would be only supposition based upon too many variables in infinite factors. In fact, his chances are considered slim for those conditions, even assuming a full procedure for ejection. Calculations based on witness estimates indicate that ejection was accomplished at approximately 900 feet above the ground, in what appeared to be fairly high rate of descent. (See Enclosure 7).

In view of the pilot's actions in his method of ejection and the time delay involved, the following factors must be considered. The Pilot was considered to be in good health and no physiological or flight stresses were felt to be operative prior to the accident. The area in which he was located at the time of the flame-out was heavily populated. It is not unreasonable to suspect that he was concerned about where the airplane would land after he abandoned it, and therefore stayed with it until he was fairly certain that it would land in the open fruit orchard ahead. Aside from the above considerations, the natural reluctance of a pilot to leave the seemingly safe confines of his cockpit and thus abandon his airplane to destruction requires, however small, apriod of consideration, analysis, decision; and execution.

Pilots must pre-plan in detail, insofar as is possible, all circumstances under which they might be faced with the low altitude emergency. Repetitive ground planning and analysis reduce indecision in flight.

Concerning the psychological factors referred to in the Medical Officer's report (an original AFM only), LTJG FISK was considered extremely capable in the air. His control of the F3U-1 and his general competence while airborne were excellent. With respect to his performance on the ground he was considered valuable but slightly below average in a few personal characteristics such as initiative and punctuality.

Moffett Field GCA had no adverse effect on the accident. GCA control had just been discontinued. The flight was still on the GCA frequency. The tape from the GCA monitor recorder was unreadable. The controller passed the MAYDAY report to Moffett Tower.

Moffett Field crash and rescue parties responded promptly but were restricted from immediate arrival by the distance to the crash and traffic congestion. Moffett crash and rescue had no adverse effect on the accident.

NAVAIRPAC report symbol 37350-1 is not considered applicable for this AFM and no report is to be submitted.

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PART IV

Conclusion

1. The conclusion of the board that the primary cause of this accident is undetermined pending completion of the Disassembly and Reconstruction Reports by O&R's, NAS, North Island and NAS, Alameda. A preliminary report will be submitted.

Recommendations

1. In order to insure adequate inspection for fuel contamination it is recommended that the provisions of COMNAVAIRPAC J-57 Engine Bulletin 3-58 be strictly complied with. If any doubt exists as to cleaning it is recommended that filters be replaced. PP

2. It is recommended that the Chief, BUAFER examine the possible need for redesign of the JFC 12-2 fuel control coarse filter or its bypass provisions. PP

3. It is recommended that the Chief, BUAFER expedite provisions for the installation of a low level escape system. F8U-1/ASC 131 appears to be the earliest available, but it is felt that every effort should be directed toward installation of the rocket catapult or the Martin Baker system. AE

4. For commands having F8U-1's BUNO 144427 and subsequent, or with ASC 150 incorporated, it is recommended that emphasis be given to the function of the emergency harness release handle, with particular attention to the requirement for manual actuation of the parachute if this handle is pulled. This is particularly important when transition has just been made from the lap belt to the full integrated harness design. The above should be reflected in the pilot's handbook. AE

5. It is recommended that F8U-1 commands include in the pilot's pre-flight check list the procedure for insuring proper positioning of the emergency harness release and the swaged ball on the terminal of the parachute arming cable. BAR Dallas message 101530Z of April 1958 provides a recommended procedure. AE

6. NAFAIR 01-45HMA-507 of 15 November 1957, Item 5, page 7, should be revised to include the integrated ejection seat system. NAFAIR 01-45HMA-506 of 15 November 1957, Item 36, page 12 should be changed to include both daily and pre-flight inspections. AE

7. It is recommended that a low level fuel warning light be incorporated in the F8U-1 and that it be energized from a fuel cell float transmitter rather than from off the gauge itself. PF AV

8. It is recommended that for F8U-1 aircraft having the capacitance type transfer fuel quantity gauge, a means be devised to reduce the similar appearance of the two fuel quantity gauges through the use of contrasting colors, large and permanent labels, or by other simple but effective means. F8U-1 commands should meanwhile direct emphasis to the main fuel quantity gauge by the use of red tape, washable paint, or similar interim techniques until a standardized change has been incorporated. AE AV

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PART VII OPNAV INST 3750.6B  
Attachment to page 3, part III remarks, OPNAV Form 3750-1.

Part	Section	Item
II	A	3c AFUR serials: 356, 368, 369, 370, 371, 372, 373
II	A	3e Failed components involved: J57-P4A engine; indicator, fuel quantity; indicator, exhaust temperature; indicator, oil pressure; actuator, pitch trim; tachometer engine; altimeter; indicator, air speed.

036

























MEDICAL OFFICERS REPORT OF AIRCRAFT ACCIDENTS/INCIDENTS AND GROUND ACCIDENTS  
DENAV FORM 2700-1 REV. 2-26-51  
DENAV FORM 2700-1 REV. 2-26-51

1. This report shall be filed in the event of an aircraft accident, incident which involves one or more of the following:

Death  
Injury  
Ditching  
Water Crash

Failure or function interrupted or interrupted by physiological or psychological factors are involved  
Aircraft ground accidents resulting in serious injury or damage  
Compensation of the form shall be the responsibility of the flight surgeon

3. For type, personnel and damage code refer to DENAV INSTRUCTION 1500.6A  
4. This form shall be prepared in quadruplicate. One copy shall be retained over in the Aircraft Accident Board for the survival and

GENERAL INSTRUCTIONS

DENAV REPORT-3700.7

Intelligence Officer in the case of combat incidents), and the original shall be air mailed (regular mail) within 250 miles of Washington, D.C. direct to Chief of Naval Operations (OP-57) Navy Department, Washington 25, D.C. within 4 working days following the incident. The third copy shall be mailed direct to Safety Equipment Branch, HQARD, Navy Department, Washington 25, D.C. The fourth copy shall be forwarded direct via air mail (regular mail within 250 miles of Norfolk, Va.) to the U.S. Naval Aviation Safety Activity, Naval Air Station, Norfolk 11, Virginia. Where more than one aircraft is involved, separate forms must be completed for each aircraft wherein one copy of the requirements in paragraph 1, above are applicable. Additional copies may be prepared for use of squadron flight surgeons and other interested individuals.

NAS, Moffett Field

8 P.M.  
COVERED BY  
THIS REPORT  
TO OTHERS  
ALONE  
INDIVIDUALLY  
IN COMBINATION WITH OTHERS  
IN COMBINATION WITH OTHERS

FISH, Robert Luis

LT  
LCR

(b) (6)  
(b) (6)

AIRCREW ACCIDENT

INCLUDE ONE OR TWO PHRASES GIVING A BRIEF BUT FACTUAL ACCOUNT DESCRIBING THE ACCIDENT/INCIDENT. INCLUDE SUCH CAUSES AS KNOWN. ESTIMATES OF TOE FORCES, ANGLES OF

LTC FISH was the pilot of F8U-1 BU# 149431, the second plane of a 2 plane section on a scheduled 2 hr instrument training flight. LTC FISH did some inst. training at altitude and then the section leader performed three GCA approaches through low approach at NAS Moffett Field. The lead was then turned over to LTC FISH who made one GCA approach through low approach and was on final approach of the second GCA approach at three and one half miles when he received instruction to wave off because of conflicting traffic and to make a right turn to downward leg heading 180°, climbing to 2000 ft. He acknowledged and accomplished. On completing this the conditions were, NAS 170 kts., alt. 2000 ft., wing up, rear down. At this point the section leader requested a fuel check but received no acknowledgement. He then called, taking lead and cancelled GCA because of rain squalls. As he came abeam LTC FISH's A/C he noted it falling astern at unusual rate and it began losing altitude. He called LTC FISH repeatedly but no acknowledgement. The section leader noted the wing coming into down position. At about 1000 ft. canopy left A/C and this and crashed in a fruit orchard, exploding and burning. Pilot struck ground with chute still intact receiving fatal injuries.

14. PILOT FACTORS (Check pertinent pilot factors listed below).

PILOT	CO-PILOT	PILOT	CO-PILOT
Yes	HYPOTIA SUSPECTED	No	
Yes	CARBON MONOXIDE POISONING SUSPECTED	No	
One	FAULTY VISION	No	
8 hours	AEROMOBILISM	No	
2.5 hours	BLACKOUT, GREYOUT, REDOUT	No	
1.3	VERTIGO	No	
1099.9	NIGHT BLINDNESS	No	
1524.2	FATIGUE	No	
One	DOMESTIC DIFFICULTIES	No	
6 Sept 1955	UNFAHILITY IN TYPE AIRCRAFT	No	
None	ANXIETY REACTION	Possible	Yes
Info. not known	LAST CDR (date and score) 4-16-57		
Info. not known	OTHER PERTINENT FACTOR IN ACCIDENT (describe below)		

See attached sheet

MEMO: DENAV FORM 2700-1 (Form 2700-1, Item 14, which are pertinent to accidents/incidents, where applicable, comment below in any of the above factors affecting crew members or passengers).





**ORIGINAL**

MCA DE RBWPM NR Q 19

BWP 055JWD A152

MM RBFPD RBEKAR RBWDQ RBEKL RBEKAC RBEGLFA RBWPM RBWPT

DE RBWDA 51

M 110339Z

FM NAS NORF

TO BUAEV

INFO BAMR WESTDIST

BAMR EASTDIST

COMNAVAIRPAC

COMNAVAILANT

NAVAVSACEN NORVA

NAS NORVA

BARR WINDSOR LOCKS

BAR EAST HARTFORD

NAS MFTFLD

COMFAIRALAMEDA

FITRON TWO ONE ONE

BT

BAMR WESTDIST 072105Z AND NAS MOFFETT 081902Z NOTAL X INTERIM REPT  
DISASSEMBLY INVEST JFC 12-2 FUEL CON SER 10621 AND PESCO DUAL FUEL  
PUMP P/N 022935-013-02 SER 2617 FROM CRASHED F8U-1 BUNO 144433  
DISCLOSED SIMILAR COND THOSE REPORTED PREV MY PRIORITY DIR NR FIFTEEN  
CMM-NINETEEN CMM TWENTY THREE AND TWENTY EIGHT BUT IN LESTER DEG X  
ALSO ONE OR MORE GROUND UP O RASH RING SEALS FOUND FUEL INLET TO CON  
AND DISTRIBUTED THROUGHOUT FUEL PUMP TRF VALVE X ALL SEALS IN PUMP  
AND CON IN PLACE X BOTH PUMP AND CON HAD LITTLE ACCIDENT DAMAGE X  
RECOMMENDATIONS REF DIRS CONT THOUGH PROXIMITY TO CAUSE OF ACCIDENT  
PROBABLE BUT NOT POSITIVE X DIR WILL FOL COMPL INVEST UPON RECEIPT ENG  
BT

CFN 072105Z 081902Z 12-2 10621 022935-013-02 2617 F8U-1 144433

11/2123Z APR RBWDA

VF-211 .....  
BAMR ..... "POG"

NNNN  
DE MCA R NR 19 11/3522Z FCG

M 11-0392

051

ENCLOSURE 5





Knowledge of the complete function and uses of this piece of equipment should be each pilot's personal interest. To help establish reflexes and procedure patterns for this and other types of emergencies, a procedure trainer or flight simulator would be invaluable and should be available. Pilots should then keep their training in such devices up-to-date as a part of Squadron training. Checking of the ditching handle and insuring that the rugged ball is in place should be a part of the pilot's pre-flight cockpit checkoff list.

It was felt that the two fuel gauges, one indicating fuel in the main cell and the other indicating transfer fuel, were too similar and that a method should be employed to make the main cell gauge more easily identifiable. As a local solution it was suggested that red tape be used to border the gauge to set it apart. A low fuel state warning light was also considered as a valuable adjunct in presentation of the fuel status to the pilot. These items are discussed more fully in the main body of the AM.









## AIRCRAFT CRASH FIRE REPORT

NAVAIR 2225 (2-48)

APR 10 1962  
CO. VF-211  
To be made out according to instructions contained in Aviation Circular Letter 124-45

1. AIRCRAFT MODEL <b>F8U-1</b>	BUREAU NO. <b>31-6433</b>	STATION SUBMITTING REPORT		DATE REPORT SUBMITTED	ACFR NO.
2. DATE OF ACCIDENT <b>4-3-58</b>	HOUR <b>1520</b>	SCENE OF ACCIDENT <b>HAN MOTT FIELD, CALIFORNIA 1-9-58 GINGERLAND &amp; LINDAIRE AVE SAN JOSE, CALIF.</b>		LOCATION	<b>6-53</b>
3. WEATHER <b>OVERCAST</b>	GENERAL	TEMPERATURE <b>55°</b>	REL. HUMIDITY <b>70%</b>	ON STATION <input type="checkbox"/>	OFF STATION <input type="checkbox"/>
INDICATE CLASSIFICATION (Check where applicable)				WIND DIRECTION <b>NW-250°</b>	VELOCITY <b>15 Miles 25 Knots</b>
4. TIME OF ALARM <b>1520</b>	TIME FIRST APPARATUS ARRIVED <b>1525</b>	TIME FIRE OUT <b>1530</b>	ELAPSED TIME <b>25 MIN.</b>	GTY. GASOLINE <b>APPROX 2500 L.</b>	NATURE OF GROUND SURFACE <b>Mud</b>

## CRASH EQUIPMENT USED

TYPE (FFN, ETC.)	USN No.	SIZE CREW	MILITARY OR CIVILIAN	EXTINGUISHING AGENTS USED		RADIO EQUIPPED	OTHER DATA
				TYPE	QUANTITY		
MB 1	71-00855	5	Military	FOAM	15 gal.	Yes	
MB 1	71-00624	5	1 Civilian 1 Military	FOAM	None	Yes	
06	71-00970	5	Military	CO <sub>2</sub>	None	Yes	

TOTAL NO. PERSONNEL IN PLANE

**1 (ONE)**

NUMBER ESCAPED UNAIDED

NUMBER RESCUED ALIVE

NUMBER REMOVED DEAD

LOCATION IN PLANE

OTHER THAN OCCUPANTS

RESCUE							
UNINJURED	INJURED	UNBURNED	MINOR BURNS	SERIOUS BURNS			
					<b>CRASH</b>		
					X		
					THREW	CLEAR OF	AIRCRAFT

8.

## MATERIAL DAMAGE

CAUSED BY CRASH

CAUSED BY FIRE

**057**

9.

COGNIZANCE OVER CRASH CREW

## FIRE-FIGHTING PERSONNEL

TITLE OF PERSON IN CHARGE FIRE FIGHTERS AT SCENE

 STATION FIRE DEPARTMENT OPERATIONS OFFICER

10. CLEAR AND CONCISE DESCRIPTION OF ACCIDENT AND METHOD USED IN CRASH FIRE AND RESCUE OPERATIONS

At 1520 tower passed word by Voycall that F8U crashed off station approx. 6 miles (air miles). Crash crew proceeded to scene and was hampered by heavy traffic. Upon arrival of crash crew major # fire was out and only magnesium parts were still afire, which crash crew put under control. City fire dept. were on the scene when crash crew arrived, also pilot had been taken to hospital. The MB-1 and 06 trucks were immediately returned to base.

ENCLOSURE 8

## 10. CLEAR AND CONCISE DESCRIPTION OF ACCIDENT AND METHOD USED IN CRASH FIRE AND RESCUE OPERATIONS—Omitted.

## 11. DISTRIBUTION

(S2-713)

Orig.: BuAer via J. S. [redacted]  
cc: BuAer (Public Works)  
cc: CNO (OP-514)  
cc: CHARS 12  
cc: CO, VF-211

## 12. COMMENT AND RECOMMENDATIONS

## 13. THE ABOVE ARE TRUE STATEMENTS, BASED ON OPERATIONS AND OBSERVATIONS AT SCENE OF CRASH

(b) (6)

SIGNED

IN CHARGE, CRASH  
FIRE AND RESCUE.

A. S. Hill

COMMANDING  
OFFICER.

## INSTRUCTIONS

## GENERAL

1. A report shall be submitted in **every** case that the Crash Fire and Rescue Crew answers an alarm involving aircraft.
2. Reports shall be prepared promptly and submitted to BuAer within 7 days by the Shore Station, or if the crash crew is a part of a Fleet Unit in an advance area, by the Fleet Unit, Acorn or Marine Air Squadron.
3. Submit photographs of crash and/or fire, if available.
4. Submit sketch showing location of crash, location of crash trucks before alarm, route of crash trucks to scene, and other pertinent details, if possible.
5. Include in report any additional enclosures, statements of personnel involved or other data that are considered desirable or that may add to an analysis of the report.

## DETAILED EXPLANATION OF SECTIONS OF FORM

Sec. 1.—AIRCRAFT MODEL and BUREAU NUMBER are same as called for on NAVAER-339.

Sec. 2.—SCENE OF ACCIDENT—Give name of field or approximate location of scene of accident.

DISTANCE TO SCENE—Give distance from location of crash truck units to scene of crash, in feet or fractional miles.

Sec. 5.—TIME OF ALARM and TIME FIRST APPARATUS ARRIVED should be given to indicate difference in minutes and seconds.  
ELAPSED TIME is from time of alarm to fire out.

QTY. GASOLINE—Give amount in crashed plane.

Sec. 5.—List **all** Fire and Rescue Trucks including any Pumpers, Ambulances, or specially equipped Jeeps, etc., that may respond.

Sec. 7.—List total number occupants at top and account for all occupants in columns below.

Sec. 8.—Give brief description in each column and an estimate in dollars, if at all possible.

Sec. 10.—Continue on separate sheet if necessary. Facts are important.

Sec. 11.—Add to distribution shown as necessary.

Sec. 12.—Any recommendation to correct deficiencies should be noted.

## LOCAL FLIGHT CLEARANCE

12NO 5705 REV. 5-57

STATION

NAS MOFFETT FIELD

EQUIPMENT

VF-21

TYPE AIRCRAFT

F8U-1

FLIGHT CALL

FU500

ACFT BLDG

NP 103

ACFT BLDG

144436

DATE

1A20 - 3 APRIL 1958

MISSION

1A20

## ADDITIONAL PILOTS, CREW, PASSENGERS AND ADDITIONAL AIRCRAFT

DUY	NAME AND INITIALS	RANK/RATE	FILE/SERIAL NUMBERS	HOME STATION	ADDITIONAL ACFT BLDGS
P	(b) (6)	LT SF	(b) (6)	N 04	144428
P		LT SF		"	P-104
P		LT SF		"	144442
P	FSK	LT SF		"	P-107
					144433

(List additional crew or passengers on reverse side)

ATO 400 DEST 200 200  
 LOCATION DATE REASON NO PAYLOAD FILED  
 DESTINATION  
 NR

DESTINATION  
 local

NT

I have been fully briefed on the weather forecast for this flight. I certify that I am familiar with local and area regulations affecting this flight and that this flight will be conducted in accordance with such regulations.

PILOT SIGNATURE

(b) (6)

P-103, 104 = 1620  
 P-106 = 1540  
 P-107 = 1525 (CASH)

I HAVE BRIEFED IN  
 ACCORDANCE WITH VF-21  
 FLIGHT BRIEFING OUTLINE

11/1

REPORTING ACTIVITY		2. REPORT SERIAL	3. DATE OF TROUBLE	4. MAJOR SUBDIVISION (Enter number in space if applicable)	
NAS Atsanta CR 584		4-3-58	5. LANT 3 HARR 3 PHAR 2 HART 2 MATS		
6. ITEM IDENTIFICATION 0-160-383018-20286		6. ITEM NUMBER	6. PAFUR 2 CODE	7. ITEM PART NUMBER 383026-C286	
7. ITEM LOCATION		8. QUANTITY 1ea	8. OVERHAULED BY (Enter number in space if applicable)		
Indicator fuel gauge main		9. AIRCRAFT/MISILE/AIRCRAFT CATALYST BUNO 144433	9. ALARM 2 CORP 5-LAKE 7-HORN 9-QUDN		
10. AIRCRAFT/MISILE/AIRCRAFT CATALYST MODEL F8U-1		11. SYSTEM/CHASSIS/ACCESSORY MODEL	10. CHASSIS/ACCESSORY SER NO. V 547994		
12. LINE (Item)		13. OPERATING BASE NAS M-Hell Field	14. CONTRACT NUMBER		
15. HOW TROUBLE NOTICED		16. WHAT IS PART CONDITION	17. CIRCUMSTANCES Special	18. TROUBLE RESULTS IN (Check if not checked) 0 AIR 1 FLIGA 2 FLAME OUT 3 ENGINE FAILURE	
<input type="checkbox"/> INOPERATIVE <input type="checkbox"/> INTERFER/BINDING <input type="checkbox"/> EXCESS VIBRATION <input type="checkbox"/> UNSTABLE/SURGING <input type="checkbox"/> LEAKAGE <input type="checkbox"/> TEMP OUT-OF-LIMITS <input type="checkbox"/> PRED. OUT-OF-LIMITS <input type="checkbox"/> PROBLEMS <input type="checkbox"/> SHOOTING <input type="checkbox"/> REVOLVER MAINT. <input type="checkbox"/> OTHER		<input type="checkbox"/> CHAFED <input type="checkbox"/> BROKEN <input type="checkbox"/> CRACKED <input type="checkbox"/> DISTORTED <input type="checkbox"/> SCORED <input type="checkbox"/> EXCESSIVE WEAR <input type="checkbox"/> DISCOLORED <input type="checkbox"/> OUT OF TOLERANCE <input type="checkbox"/> CORRODED <input type="checkbox"/> O.K. <input type="checkbox"/> CANNOT DETERMINE <input type="checkbox"/> OTHER (Amplify)	<input type="checkbox"/> DESIGN DEFICIENCY <input type="checkbox"/> OP. TECH/ADJ. <input type="checkbox"/> NORMAL USE <input type="checkbox"/> FAULTY MFG/INSPEC <input type="checkbox"/> DEFICIENT MAINT/D/H <input type="checkbox"/> DAMAGED ON RECEIPT <input type="checkbox"/> WEATHER CONDITION <input type="checkbox"/> FLUID CONTAMINATION <input type="checkbox"/> FOREIGN OPS/COMBAT <input type="checkbox"/> OTHER PARTS <input type="checkbox"/> FAULTY PRESERV. <input type="checkbox"/> UNDETERMINED/OTHER (Amplify)	<input type="checkbox"/> FOLLOW-UP REPORT <input type="checkbox"/> HIGH TIME REMOVAL <input type="checkbox"/> MISSION ABORTED  <b>Environment</b> <input type="checkbox"/> SANDY/DUSTY <input type="checkbox"/> ARCTIC <input type="checkbox"/> TROPIC <input type="checkbox"/> ARID	19. DISPOSITION OF FAILED PART (Do not check if not removed) <input type="checkbox"/> RETURNED TO SUPPLY <input type="checkbox"/> REPAIRED/REINSTALLED <input type="checkbox"/> SURVEYED (Loc, Missing, or Destroyed) <input type="checkbox"/> HOLDING 30 DAYS  (Show RATIO or date returned to supply)
				20. PRIORITY FOR PRIORITY INVEST (Name of DCPR)  PEN <b>059</b> (Priority number assigned, DCPR)	
				<input type="checkbox"/> TO CONTRACTOR (Name of contractor)  VIA: _____ (Signature contractor's legal rep.) (Date)	
				21. FINAL DISPOSITION (Ref. doc. addressing ultimate return or supply)	
				<input type="checkbox"/> FUR <input type="checkbox"/> AMPFUR <input type="checkbox"/> URGENT AMPFUR <input type="checkbox"/> FLIGHT SAFETY AMPFUR <input checked="" type="checkbox"/> PRIORITY SIR (DCPR use only)	
22. STATEMENT OF TROUBLE/CORRECTIVE ACTION (Check box only when publication as FUR/Disc. Plan is desired)		<b>AAR 4-3-58</b>			
23. ANNOTATING REMARKS (Attach additional sheets, sketches, and photographs, as appropriate)		INDICATOR BADLY DAMAGED IN CRASH. POSITION OF INTERNAL COMPONENTS INDICATES THAT INDICATOR WAS READING APPROXIMATELY A FULL TANK OF FUEL.			
24. FAILURE, UNSATISFACTORY REMOVAL REPORT		25. SIGNATURE (b) (6)	26. NAME/DATE 5-23-58	27. DATE 5-23-58	
28. INDEX/EXPLANATION		FILE			

1. REPORTING ACTIVITY		2. REPORTING PERIOD		3. STATE OF PARTS RECEIVED		4. REASON FOR REMOVAL	
NAS Alameda ORR		588 (Part Number)		4-3-58 ENTERED CODE		1. LANE 2. RADAR 3. FLAM 4. PAC 5. UATTA 6. RRD 7. BAR 8. SINDA	
R88-I 1937-010-000,				USG.		1. ITEM PART NUMBER 2. ALARM 3. COLOR 4. LANE 5. TOWING 6. QUADRANT 7. CHART 8. JAK 9. HOME 10. TYPE 11. OTHER	
5. ITEM HOMECOUNTRY		6. SOURCE		7. OVERALL STATUS [From number in parentheses]		8. OTHER INFORMATION	
U.S. CATASTROPHIC		1 car		SR-151-A		9. OVERALL STATUS [From number in parentheses] 10. ALARM 11. COLOR 12. LANE 13. TOWING 14. QUADRANT 15. CHART 16. JAK 17. HOME 18. TYPE 19. OTHER	
10. AIRCRAFT/BINNED/AD/CATASTROPHIC		11. SYSTEM/ENGINE/ACCESSORY		12. CONTRACT NUMBER		13. SER NO. 1237	
MODEL		MODEL		14. CONTRACT NUMBER		15. POSSIBLE CAUSE(S) [Check boxes of most probable]	
F8U-1		NAS Moffett Field		144433		16. ENGINE FAILURE	
16. INCORPORATING THIS		17. WHAT IS THE PART CONDITION		18. POSSIBLE CAUSE(S) [Check boxes of most probable]		19. DISPOSITION OF FAULTY PART [Or not check if not removed]	
1. INOPERATIVE		0. CHARGED		1. DESIGN DEFICIENCY		20. RETURNED TO SUPPLY	
2. INTERFERE/ BINDING		1. BROKEN		2. OP. TECH./ADJ.		3. REPAIRED/REINSTALLED	
3. EXCESS VIBRATION		2. CRACKED		3. NORMAL LIFE		4. SURVEYED [Loss, Missing, or Destroyed]	
4. UNUSABLE/ BURDENING		3. DISTORTED		4. DEFICIENT MFG./INSPEC.		5. HOLDING 30 DAYS [Show R-430 or date received to supply]	
5. LEAKAGE		4. SCORED		5. DEFICIENT MAINT./SPECS		6. RELEASED FOR PRIORITY INVEST [Name of DMR]	
6. RPM OUT-OF-LIMIT		5. EXCESSIVE WEAR		6. DAMAGED ON RECEIPT		7. FLIGHT OPS [Ref document specifying review, QDR-A]	
7. TEMP. OUT-OF-LMT		6. DISCLOSED		7. WEATHER CONDITION		8. TO CONTRACTOR [Name of contractor]	
8. PRESS. OUT-OF-LMT		7. OUT OF TOLERANCE		8. FLUID CONTAMINATION		9. VIA [Signature concierge's name esp. if Date]	
9. TROUBLE SHOOTING		8. CORRODED		9. OTHER PARTS		10. FINAL DISPOSITION [Ref doc advising ultimate return to supply]	
10. PREVENTIVE MAINT.		9. O.K.		10. FAULTY PRESERV		11. REPORT 16 [G FUR, I AMPUT, U URGENT AMPUT, 3 FLIGHT SAFETY AMPUT, X PRIORITY BIN (DMR-A only)]	
11. OTHER		10. CANNOT DETERMINE		11. UNDETERMINED/OTHER		(b) (6)	
12. NOT REMOVED/UNSAT. (empty)		13. OTHER		(empty)		FILE	
22. STATEMENT OF TROUBLE/ CORRECTIVE ACTION [Check box only when publication of FUR Discouraged indicated.] TROUBLE: (Attach additional sheets, sketches, and photographs, as appropriate) CORRECTIVE ACTION: OR BADLY DAMAGED BY CRASH. NO INFORMATION OBTAINED FROM FAILURE, UND. OR REMOVAL REPRODUCTORY							
RE. SIGNATURE		RE. SIGNATURE		RE. RATE		RE. DATE	
RE. SIGNATURE		RE. SIGNATURE		RE. RATE		RE. DATE	

1. IDENTIFYING ACTIVITY		2. REPORT NUMBER	3. DATE OF TROUBLE	4. MAJOR COMMAND (Enter number in front of letter)
NAS Alameda O&R		587	4-3-58	1. GANT 2. HARR 3. PEARL 4. GALT 2. PAC 4. NMIA 5. HBD 6. BAR 9. OTHER
5. TEAM IDENTIFICATION		(Stock Number)	5. ITEM'S CODE	7. TEMP/PART NUMBER
R-1524-1			Airborne	R-1524-1
6. PART CODE		8. ITEM Nomenclature	9. QUANTITY	10. OVERHAULED BY (Enter number in front of letter)
		Actuator, Pitch Trim	1 ea	1. ALAN 2. CORP 3. LAGE 4. MORSE 5. QUON 2. CHPT 4. JAS 6. MORT 8. PHEL 9. OTHER
11. AIRCRAFT/MISSILE/SDV/ATMOS.		12. SYSTEM/ENGINE/ACCESSORY	13. AIRCRAFT/MISSILE/SDV/CAPACITY	14. ENGINE/ACCESSORY
MODEL FGU-1		MODEL	BUNO 144433	SER. NO. 70709
15. SITE (Name)		16. OPERATING BASE	17. CONTRACT NUMBER	18. TROUBLE RESULTED IN (Check no more than two)
7 NAS Moffett Field				<input type="checkbox"/> AAR <input type="checkbox"/> FLIGT <input type="checkbox"/> FLAME OUT <input type="checkbox"/> ENGINE FAILURE
20. HOW TROUBLE NOTICED		21. WHAT IS PART CONDITION	22. CAUSE OF TROUBLE	23. CIRCUMSTANCES
0 INOPRATIVE 1 INTERFER./BINDING 2 EXCESS. VIBRATION 3 UNSTABLE/SURGING 4 LEAKAGE 5 RPM OUT-OF-LIMITS 6 TEMP. OUT-OF-LMT 7 PRESS. OUT-OF-LMT 8 TROUBLE SHOOTING 9 PREVENTIVE MAINT. 11 OTHER 12 NOT REMOVED/UNSAT. (Complete)		0 CHAFED 1 BROKEN 2 CRACKED 3 DISTORTED 4 SCORED 5 EXCESSIVE WEAR 6 DISCOLORED 7 OUT OF TOLERANCE 8 CORRODED 9 O.K. 11 CANNOT DETERMINE 12 OTHER (Specify)	0 DESIGN DEFICIENCY 1 OP. TECH./ADJ. 2 NORMAL USE 3 FAULTY MFG./INSPEC. 4 DEFICIENT MANT./O.R. 5 DAMAGED ON RECPT. 6 WEATHER CONDITION 7 FLUID CONTAMINATION 8 FOREIGN OPS/COMBAT 9 OTHER PARTS 11 FAULTY PRESERV. 12 UNDETERMINED/OTHER (Specify)	0 INITIAL FOLLOW-UP REPORT 1 HIGH TIME REMOVAL 12 MISSION ABORTED  Environment 1 SANDY/DUSTY 2 ARCTIC 3 TROPIC 4 ARID  Trouble Discovered During 1 FLIGHT OPS 2 GROUND OPS/TEST 3 MAINTENANCE 8 PRIOR PART INSTALL
				24. DISPOSITION OF FAILED PART (Do not check if not removed) <input type="checkbox"/> RETURNED TO SUPPLY <input type="checkbox"/> REPAIRED/REINSTALLED <input type="checkbox"/> SURVEYED (Lost, Missing, or Destroyed) <input type="checkbox"/> HOLDING 30 DAYS  <input type="checkbox"/> RELEASED FOR PRIORITY INVEST. (Name of DCR)  PER: (Ref. document specifying issue, DCR) <input type="checkbox"/> TO CONTRACTOR (Name of contractor)  VIA: (Signature command's local rep.) (Date)  FINAL DISPOSITION: (Ref. doc. addressing ultimate return to supply)
25. STATEMENT OF TROUBLE/CORRECTIVE ACTION (Check box only when publication as FUR/Digist Phase is desired)		27. REPORT IS		
<input type="checkbox"/>		<input type="checkbox"/> FUR <input type="checkbox"/> AMPFUR <input type="checkbox"/> URGENT AMPFUR <input type="checkbox"/> FLIGHT SAFETY AMPFUR <input type="checkbox"/> PRIORITY DIR (DCR are only)		
28. ADDITIONAL REMARKS (Attach additional sheets, sketches, and photographs, as appropriate)				
ACTUATOR DAMAGED EXTERNALLY DURING CRASH, BUT FOUND TO BE STILL IN OPERATING CONDITION. MOUNTING BRACKET BROKEN DURING CRASH. POSITION OF ACTUATOR SHAFT INDICATES ACTUATOR WAS NEARLY FULLY RETRACTED. EVIDENCE INDICATES THAT THIS MAY HAVE BEEN THE NEUTRAL POSITION OF THE ACTUATOR.				
FAILURE, UNSATISFACTORY OR REMOVAL REPORT		29. SIGNATURE	30. RANK RATE	31. DATE FILE
NAVAL 3009 1959 8-58		(b) (6)	Elmer G	5-23-58

REVISION NUMBER

NAS Alameda O&amp;R

E. REPORT SERIAL

586

F. DATE OF INCIDENT

4-7-78

G. MAJOR COMMAND (Check number if applicable)

1-CART 2-HASS 3-FLAW 4-HEAT 5-MATB  
6-PAC 7-NATRA 8-RAD 9-NAV 0-OTHER

3

4. ITEM IDENTIFICATION

R88-I-2600r025-009

(Stock Number)

G.E.

50T43AAM

5. ACT. CODE

E. ITEM HOMENOMENCLATURE

Indicator, RPM 2

12. AIRCRAFT/MISSILE/BLD/CATAPULT

MODEL F8U-1

MODEL

13. LOCATION (Area)

NAS Moffett Field

14. CONTRACT NUMBER

BLDG 14443

SER. NO. N5350

15. TIME (Hours)

16. DESCRIPTION

17. CONTRACT NUMBER

18. TROUBLE RECORDED (Check boxes if not recorded)

19. HOW FAIRLY SERVICED

20. WHAT IS PART CONDITION

21. CAUSE OF TROUBLE

22. CIRCUMSTANCES

23. DISPOSITION OF FAILED PARTS (See R400 or data returned to supply)

24. RETURNED TO SUPPLY

25. REPAIRED/REINSTALLED

26. SURVEYED (Lost, Missing, or Destroyed)

27. HOLDING 30 DAYS

(See R400 or data returned to supply)

28. RELEASED FOR PRIORITY INVEST (Name of OCR)

29. PER (Ref. document specifying name, OCR)

30. TO CONTRACTOR (Name of contractor)

31. VIA (Signature contractor's legal rep.) (Date)

32. FINAL DISPOSITION (Ref. doc. advising ultimate return to supply)

603

33. STATEMENT OF TROUBLE/CORRECTIVE ACTION (Check box only when publication as FUR Digest Phase is desired)

34. AMPLIFYING REMARKS (Attach additional sheet, sketches, and photographs, as appropriate)

INDICATOR BADLY DAMAGED BY CRASH. NO INFORMATION OBTAINED FROM INVESTIGATION.

FAILURE, UNSATISFACTORY  
OR REMOVAL REPORT  
AMWAFM-3020, 1975, 8-78

25. SIGNAL

(b) (6)

26. NAME/DATE  
Elect. Eng27. NAME/DATE  
J-21-78

FILE

28. REPORT IS

- FUR
- AMPFUR
- URGENT AMPFUR
- FLIGHT SAFETY
- AMPFUR
- PRIORITY DIR (OCR use only)

EQUIPMENT ACTIVITY		F. REPORT SERIAL		G. DAYS OF TROUBLE		I. AIRCRAFT/MISSILE/CATAPULT	
S. ITEM IDENTIFICATION R88-I-2673-000-000 (Stock Number)		585		4-3-85		1. AIRCRAFT/MISSILE/CATAPULT 1. LANT 2. HASE 3. FIAW 4. HNEF 5. HASE 6. PAC 7. THATHA 8. R&D 9. BAR 10. OTHER	
K. ACT CODE		L. REPORTS CODE		M. REPORT NUMBER			
N. ITEM Nomenclature <i>Indicator, exhaust temp.</i>		O. QUANTITY		P. OVERHAULED BY		Q. EQUIPMENT ACCESSORIES	
R. AIRCRAFT/MISSILE/CATAPULT		1 ca.		1. ALARM 2. COPI 3. LAMP 4. HOME 5. DASH 6. CHPT 7. BAR 8. HOME 9. HNEF 10. OTHER		R. EQUIPMENT ACCESSORIES	
MODEL F8U-1		T. SYSTEM/ENGINE/ACCESSORY		BUNO 144433		S. SER. NO.	
U. TIME (Hours)		V. CONTRACT NUMBER		W. TROUBLE RELATED TO (Check applicable)		X. ENGINE FAILURE	
NAS Moffett Field				<input type="checkbox"/> XAR <input type="checkbox"/> FLIG <input type="checkbox"/> FLAME OUT <input type="checkbox"/> ENGINE FAILURE			
20. HOW TROUBLE NOTICED		21. WHAT IS PART CONDITION		22. CAUSE OF TROUBLE		23. CIRCUMSTANCES	
0 INOPERATIVE	0 CHAFED	0 DESIGN DEFICIENCY	0 FOLLOW-UP REPORT	0 RETURNED TO SUPPLY	24. DISPOSITION OF FAILED PART (Do not check if not removed)		
1 INTERFER./BINDING	1 BROKEN	1 OF. TECH/ADJ.	1 HIGH TIME REMOVAL	1 REPAIRED/REINSTALLED	<input type="checkbox"/> X SURVEYED (Loss, Missing, or Destroyed)		
2 EXCESS VIBRATION	2 CRACKED	2 NORMAL USE	2 MISSION ABORTED	2 HOLDING 30 DAYS	(Show B-530 or date returned to supply)		
3 UNSTABLE/SURGING	3 DISTORTED	3 FAULTY MFG/INSPEC.	3 ENVIRONMENT	4 RELEASED FOR PRIORITY INVEST	(Name of OCR)		
4 LEAKAGE	4 SCORCHED	4 DEFICIENT PAINT/Q.C.	1 SANDY/DUSTY	5 TO CONTRACTOR	(Name of contractor)		
5 RPM OUT-OF-LIMITS	5 EXCESSIVE WEAR	5 DAMAGED ON RECEIPT	2 ARCTIC	6 VIA	(Signature contractor's local rep.) (Date)		
6 TEMP. OUT-OF-LMT	6 DISCOLORED	6 WEATHER CONDITION	3 TROPIC	7 FINAL DISPOSITION	(Ref. doc. advising ultimate return to supply)		
7 PRESS. OUT-OF-LMT	7 OUT OF TOLERANCE	7 FLUID CONTAMINATION	4 AMBI	8			
8 TROUBLE SHOOTING	8 CORRODED	8 FOREIGN OBJ/COMBAT	9 FLIGHT OPS	9			
9 PREVENTIVE MAINT.	9 O.K.	9 OTHER PARTS	10 GROUND OPS/TEST	10			
10 OTHER	11 CANNOT DETERMINE	11 FAULTY PRESERV.	11 MAINTENANCE	11			
11 NOT REMOVED-UNSAT. (empty)	12 OTHER	12 UNDETERMINED/OTHER (Amplify) 1	12 PRIOR PART INSTALL	12			
25. STATEMENT OF TROUBLE/CORRECTIVE ACTION (Check box only when publication on PUR Digital Phase is desired)							
26. REMARKS (Attach additional sheets, sketches, and photographs, as appropriate)							
TATOR BADLY DAMAGED IN CRASH. NO INFORMATION OBTAINED FROM INVESTIGATION							
FAILURE, U. OR REMOVAL RE-FACTORY RAVIER 3083-1984		28. SIGNATURE		29. RANK/RATE		30. DATE	
(b) (6)				Elect Eng.		5-23-85	
FILE							

# FLIGHT PATH CHART

Scale 1:50,000

$\frac{1}{2}$  Mile    $\frac{1}{4}$  Mile    $\frac{1}{4}$  Mile

TRUE  
NORTH

WIND  
240/22 kts

NAS  
MOFFETT

GCA DOWNWIND LEG

GCA DOWNWIND

SUNNYVALE  
CENTRAL  
DISTRICT

GCA FINAL

FLIGHT PATH JUST PRIOR TO CRASH

(B)

TRUE  
NORTH

WIND  
240/22 kts

SANTA  
CLARA

063

SAN JOSE  
CENTRAL  
DISTRICT

GCA PATTERN

IMPACT  
AREA

- A - Pilot given GCA was off due to field traffic; initiated climbing right turn to downwind leg. Altitude about 900'. Plane started dirty (gear down, wing up), power was applied so about full and a climbing right turn (30° Bank) was established.
- B - Right turn, altitude above 2000', gear down, wings up. At speed about 180 kts. Power was retarded, turn continued to downwind leg. Altitude 2000', speed about 170 kts. Steady.
- C - Approximate position where wingman (flying on left wing) did not get acknowledgement for radio transmission. Wingman came up behind of F8U-1 No. 109 and noticed pilot was concentrating within cockpit. Wingman noticed F8U-1 No. 109 falling behind at this point and started passing him. Wingman shortly thereafter noticed lack of characteristic black smoke from tail. Plane started descending from 2000' at about 150 kts, and noticed wing coming down.
- D - No. 109 started steep nose down attitude and wingman noticed canopy leaving airplane at about 1000'.
- E - Impact area (See enclosure for blow-up of this area). Area located at grid coordinates 783299 of San Jose, California Map, Sheet 1838TV.

# IMPACT AREA CHART

All Bearings TRUE

not to scale

Terrain Elevation 125 Feet

Stevens Creek Road

←(E)

N

Approximate Location of Witnesses:

A - (b) (6)

B -

C -

D -

E - Lt. (b) (6)

F - Lt(jg) (b) (6) (airborne)



157°

FLIGHT PATH

Thornton Way

Ginger Rd.

③ Maywood Ave

061

⑧ B

Lundgren St

houses

SEAT

IMPACT POINT

PILOT'S BODY

Orchard

Strawberry Patch

Roanoke Way

D ④

①

ORIGINAL

ENCLOSURE 2

San Jose Los Gatos Rd.

990



ENCLOSURE 3a

VIEW SHOWING DISINTIGATION  
OF FWD FUSELAGE AND FIRE  
DAMAGE.

SHOWING PATH  
IN DIRECTION OF  
WRECKAGE. TWO RIGID  
METAL PARTS FOUND IN  
THIS AREA

490



VIEW OF IMPACT  
CRATER AND  
VERTICAL POSITION  
OF WING.

899

ENCLOSURE 3d

VIEW SHOWING VERTICAL  
POSITION OF WINGS

690

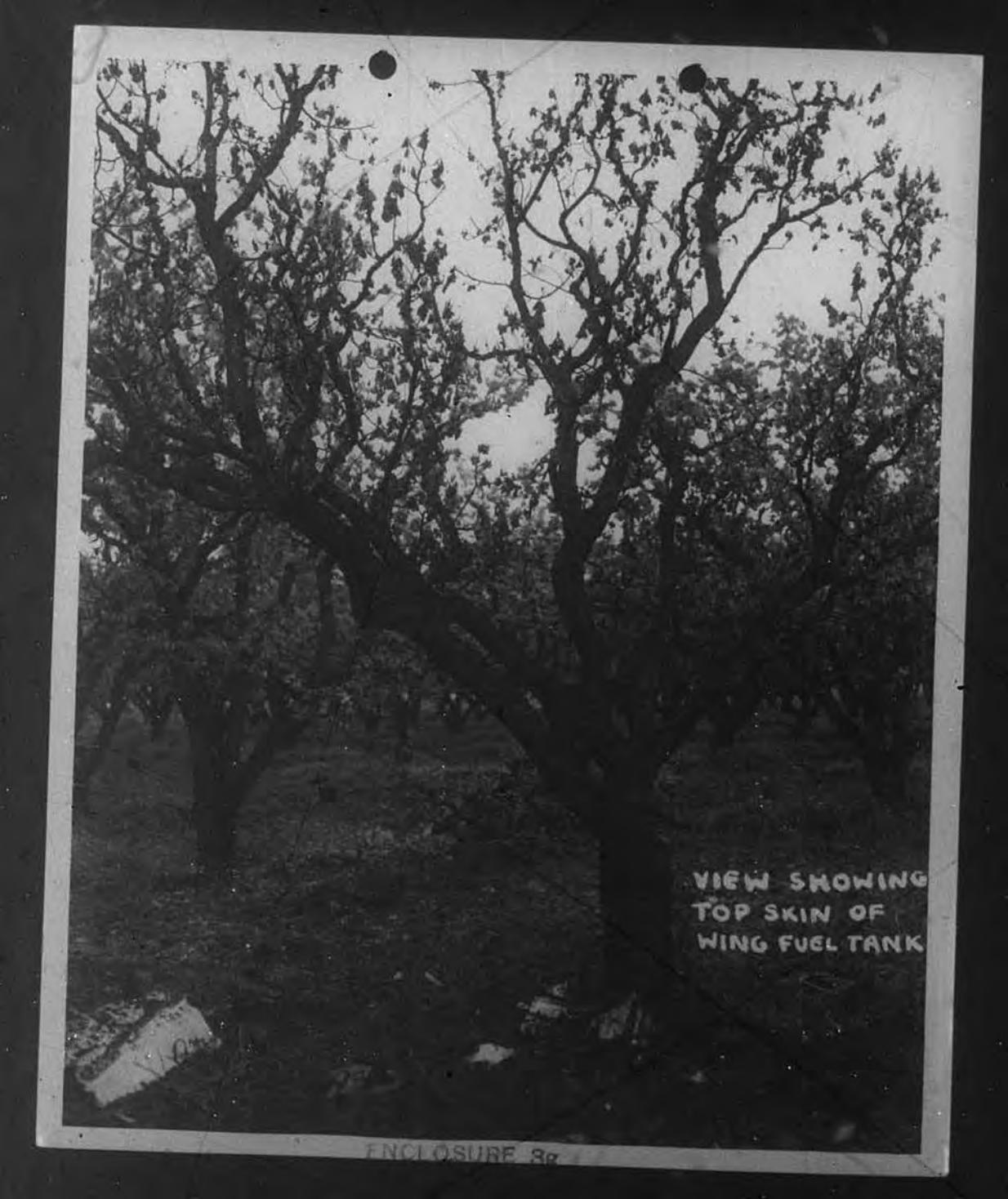
IMPACT AREA SHOWING  
TAIL SECTION

070

1. TAIL SECTION
2. TOP SKIN OF WING FUEL CELL

2





VIEW SHOWING  
TOP SKIN OF  
WING FUEL TANK

ENCLOSURE 3h



ENCLOSURE 3h

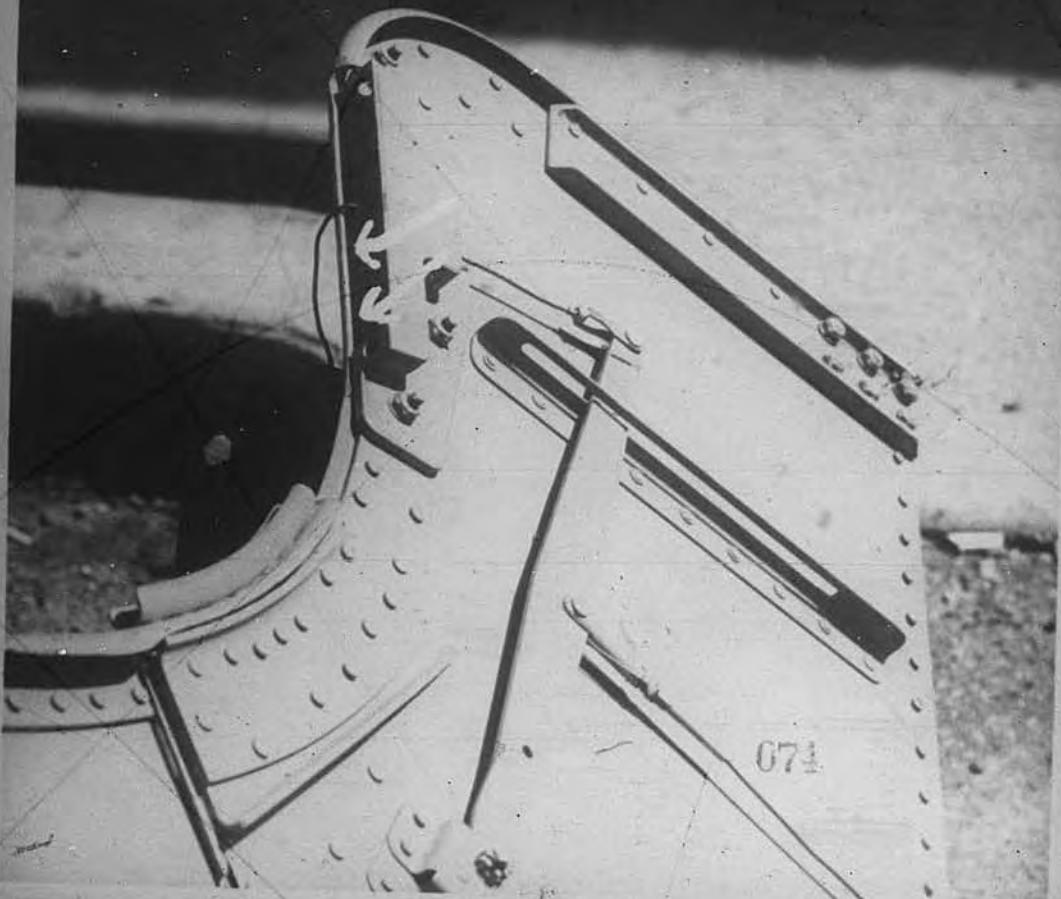


VIEW OF ENGINE  
TURBINE BLADES

EJECTION SEAT  
SHOWING POSITION  
OF EMERGENCY  
HARNESS RELEASE  
HANDLE



RIGHT SIDE SEAT BUCKET  
RAIL SHOWING BURNELLING  
BY HARNESS RELEASE  
CABLE



ENCLOSURE 8j

RIGHT SIDE OF EJECTION  
SEAT SHOWING KINKED  
EMERGENCY HARNESS  
RELEASE CABLE.



RIGHT SIDE OF EJECTION  
SEAT SHOWING KINKED  
EMERGENCY HARNESS  
RELEASE CABLE.



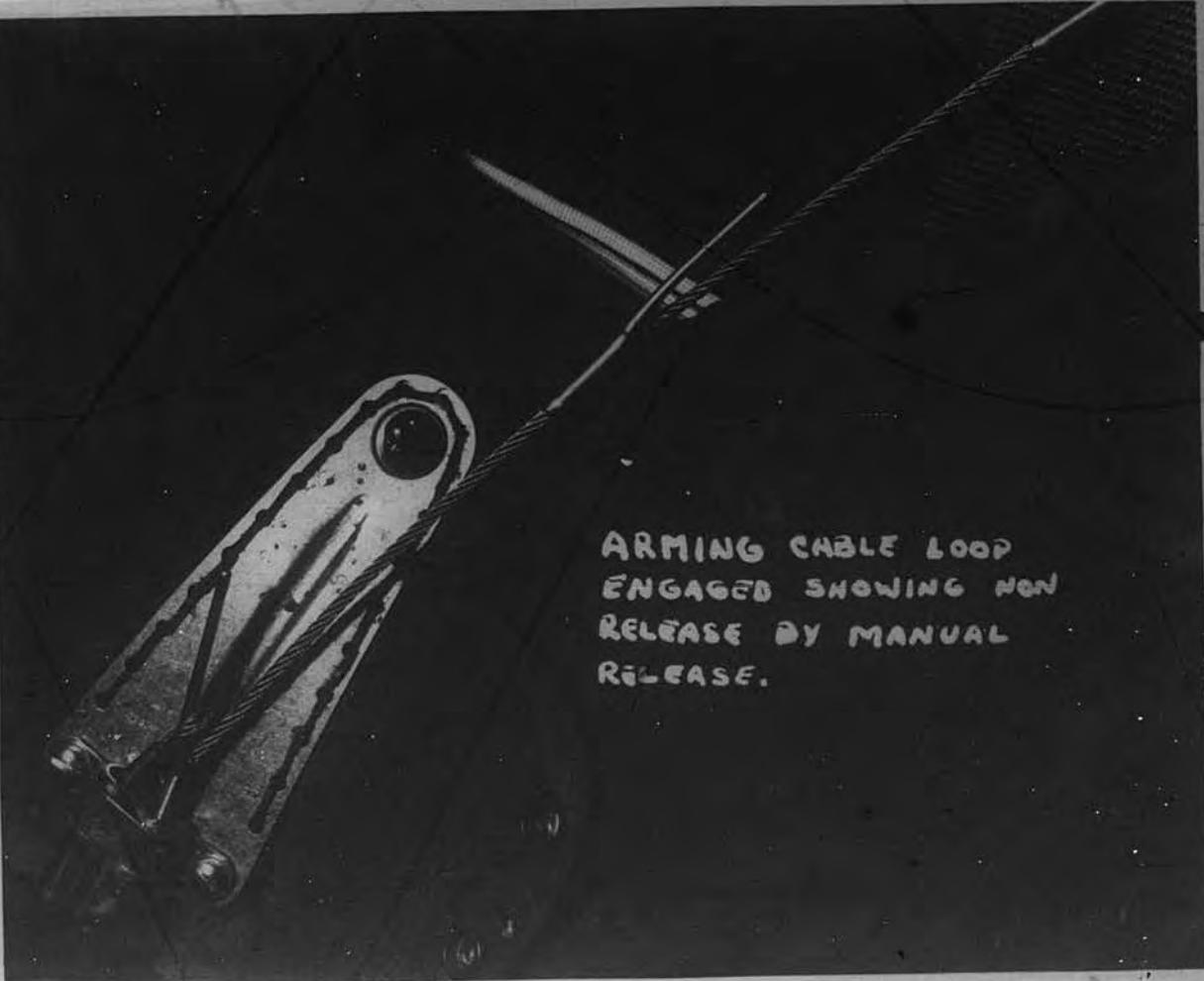
AUTOMATIC  
ARMING CABLE PARACHUTE  
CHANNELLED SHOWING  
SWIVELLED SWIVEL BALL





ENCLOSURE 3N

GENERAL IMPACT  
DAMAGED TO AUTOMATIC  
PARACHUTE ACTUATOR  
DEVICE.



ARMING CABLE LOOP  
ENGAGED SHOWING NON  
RELEASE BY MANUAL  
RELEASE.

A black and white photograph showing a close-up of a military oxygen mask and its associated equipment. The mask, which is light-colored and has a textured, padded design, is attached to a harness with several straps. A coiled tube connects the mask to a cylindrical canister. The canister is dark and has the word "EXCEP" printed on it in large letters. In the bottom right corner of the image, there is handwritten text that reads "EXTRUDED OXYGEN MASK".

EXTRUDED  
OXYGEN MASK

EJECTION SEAT  
SHOWING POSITION  
OF EMERGENCY  
HARNESS RELEASE  
HANDLE





082

DAMAGED LEFT SIDE  
APH-5 HELMET.



1. BENT AUTOMATIC PARACHUTE ACTUATOR POWER CABLE.
2. GENERAL IMPACT DAMAGE TO AUTOMATIC PARACHUTE ACTUATOR DEVICE.

BROKEN NARROW  
FITTING.

480

POSITION OF  
IMPACT OF PILOT'S  
BODY.

